

Continents in Cognition

by

Matthew Christopher Harris

Department of Philosophy
Duke University

Date: _____

Approved:

Andrew Janiak, Supervisor

Carlotta Pavese

David Wong

Wayne Norman

Dissertation submitted in partial fulfillment of the requirements for the degree of
Doctor of Philosophy in the Department of Philosophy
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ABSTRACT

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Dedication

This dissertation is dedicated to Hegel, Coltrane and the rights of non-human persons.

Abstract

Is it racist to think that black people think differently from Asian people or that Asian people think differently from white people? In one sense, we want to avoid assuming that someone's appearance or skin color has any relevance to the intellectually or morally relevant aspects of their being—the 'content of their character' which Martin Luther King jr. hoped everyone would eventually learn to engage when interacting with one another. Still in another way, we seem to care about giving people credit for cultural contributions in a way that suggests that ethnic heritage 'belongs' to groups of persons in ways that are not entirely arbitrary. That is, we seem to intuitively associate black music with black people, mariachi with Mexican people and Indian music with Indian people. Of course, this is not random. Music and language are important to brain development. So it seems tenable that there are mental attributes of cultural identity that vary in ways that we (non-arbitrarily) associate with varied physical appearances.

John Locke discovered that *persons* are distinct from *bodies*. He recognized that the minds of agents are central to moral questions about blame and responsibility. This distinction has endured for centuries and American society is founded on Locke's premise that persons are essentially psychological beings—from our legal system to our regard for mental health. For example, conceiving *persons* psychologically was central to Locke's conception of human nature and political theory of natural rights. An important aspect of personal identity that Locke did not consider when he first analyzed *persons* in mental terms was race, but *persons* inherit cognitive patterns that determine how they perceive themselves and their environments from their cultures. In fact, much of what makes us

ourselves comes by way of mental inheritance which resembles biological inheritance. But we are still unaccustomed to considering how mental patterns across populations shape agency in ways that are similar to how human races are studied in biology. This dissertation attempts to get to the core of the problem by asking ‘What does it mean to *be* a person of a specific ethnicity or culture?’. Methodologically, the approach taken here will be naturalistic, drawing from the best evidence across the sciences, arts and humanities.

I employ meme theory for its simple depiction of cultural identity as inheritance. But the theoretical stances of this dissertation do not depend on meme theory’s correctness or reflect a strong commitment to the theory. I agree with critics of this theory that it exaggerates the resemblance between biology and culture. As it stands, I believe that the theory is very probably false. Still, in this circumstance, it helps to use a very simple model as a place-holder for other theories of cultural transmission. I do not think my account relies on the details in any way that matters.

Since I will be discussing several types of identity in the coming chapters, allow me to provide a few definitions. I use ‘psychological identity’ and ‘cognitive identity’ interchangeably and I use both as broader than ‘narrative identity’. So when I ask what it might mean to be cognitively or psychologically black I mean to ask the same question by both terms. It would be different to ask what it means to be narratively black. When I discuss ‘narrative identity’ I mean a person’s story. I agree that a person’s story is relevant to their psychological identity, but deny that narrative conceptions of identity include everything that is important to identity. Although having a life-story that involves being black is relevant, there is more to being mentally black than having the right story. This

makes my account of identity distinct in two ways. Firstly, having the right narrative is not obviously sufficient for having a black psychological identity. Secondly, it allows that certain non-narrative traits are sufficient for a black psychological identity. To preview, I will be arguing that belonging to ethnic groups involves sharing perceptual and attentional dispositions in common with the group and that many non-propositional mental states are of importance to psychological identity. Many of the most important details of my account do not emerge until the later chapters, so if the reader finds the discussion of race and mind to be too slow or unclear in the earlier chapters, feel free to skip ahead. I think the current order motivates the discussion in a logical fashion, but this might appear to be at the expense holding back on stating my own, more nuanced views for the end.

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I would like to acknowledge the contributions of *all* of my psychological predecessors, especially the non-human.

Chapter 1

Introduction: A Dialogue on Skin, Cognition and Ontology

The cast gathers on a rounded stage where various speakers have presented new ideas about the societal implications of cognitive science. The audience has finally reduced to an intimate few dozen—these remaining guests await an intimate Q&A session that is scheduled to last until dinner. None of the presentations given were explicitly about race. So it comes as a surprise when a question about a familiar theory of cognition inspires a deep conversation on the link between race and psychological identity.

Seated in the center of the stage is our protagonist Chatter Warmish, a kind, thoughtful and responsive philosopher with an inclination to find balanced, measured solutions. Seated at a desk facing the stage is Ernesta Provoksi, the earnest and inquisitive moderator with a Socratic gift for delivering rich and uncomfortable questions. Seated to the far right, facing Ernesta is Professor Liberto Freedman, a card carrying member of the ACLU who was arrested for protesting the Vietnam war. He is professor emeritus of Evolutionary Psychology at a large Midwestern research university. Seated to the far left, facing Ernesta is Professor P. C. Neverwrong, who owns what is likely the only Model 3 Tesla with a Kerry-Edwards bumper sticker. She is dual professor of Literature and Cognitive Linguistics at a small, private North-Eastern liberal arts college.

ERNESTA PROVOKSI: Thank you all for forgoing the comfort of your hotel rooms to gift us a Q&A session. The audience has voted to choose questions that were submitted for the three of you to discuss. The goal is really just to keep the conversation running and interesting. So if the first question occupies us the entire time that will be fine. Hmm.

The first one is interesting. I'm excited to hear the three of you weigh in on it. Since the ideas at the center of this question was mentioned in all of your talks today, please— anyone feel free to speak first. I won't read the entire thing because it goes on quite a bit in rather technical language, but to summarize the first part of it, it seems our viewers are curious: "What does the Extended Cognition hypothesis suggest for our understanding of racial identity?"

PROFESSOR P. C. NEVERWRONG: I'm not positive that I understand what is being asked. There's certainly no empirical link between race and thinking in any important way, let me just get that out of the way. So it seems more likely that these questions intended to ask how cultural tendencies impact our perceptual lives. Is that right? Could you say it a bit more and let me know if that is the general premise?

ERNESTA PROVOKSI: Thanks professor. No, it is explicitly about racial identity, not culture.

PROFESSOR P. C. NEVERWRONG: I certainly was not expecting this question. I'm really not a fan of it... It's just needlessly provocative. I won't say that this person has a racist agenda, though I'm just not sure how such a question gets motivated.

ERNESTA PROVOKSI: Perhaps our conversation requires a bit of refreshing in case anyone didn't catch today's lecture or needs to be reminded what the Extended Cognition Hypothesis says and is meant to replace. Would someone be willing to explain it?

1.1 Extended Mind Hypothesis

CHATTER WARMISH: Sure, the gist is that the locations that are the physical sites of mental states are not limited to brains, neurons or even nervous systems. Rather, cognitive processes are quite literally extended throughout one's body and environment and do not end at the boundaries of the skull. For example, the physicist Richard Feynman argued that he was not simply doing physics in his head, but rather that his notebook and pencil were contributing in real ways to the activity of configuring and solving computations. The pencil and paper were required hardware—as Richard Feynman could not perform the task by himself any more than a computer is able to function without its motherboard. This is a challenge to the standard position that the physical basis of thinking is in the brain. Let's consider our smartphones for a moment; My iPhone takes over many tasks that we otherwise consider 'mental' when done in the head such as mathematical calculations or the storage and retrieval of memories as well as things like answering questions or navigating home. Extended Cognition theory suggests there is no reason to say that these tasks are not mental because the processing occurs inside of a silicon chip as opposed to a human neuron—but also, in a very real way, that these are still mine in an extended sense, as with Feynman's pencil and paper.

ERNESTA PROVOKSI: Thank you, that was very clear.

PROFESSOR P. C. NEVERWRONG: Well part of the question asked how this theory of cognition informs us about ourselves in racial terms, which is the part that I take issue with because it turns science into a thorn. We should engage persons as individuals and

only concern the content of their minds. No value is added by attaching this theory to race.

PROFESSOR LIBERTO FREEDMAN: Please allow me to interject... I'm sure the two of you agree that there are consequences to censoring science. We can't just go about as if there are no tough questions to tackle... We must tackle everything, without bias and accept whatever the outcome is... objective truth means your feelings do not matter next to the hard facts of life. Do you want to discover what carves objective reality at its tendons or do you want scientists to write poetry?

CHATTER WARMISH: Perhaps there is a middle ground here too; It is conceivable that this question has potential to reveal unexpected truths that bring us all closer. On the one hand, if we fail to explain how science addresses the concerns that challenge us, people will turn elsewhere. The problem there is that small communities of likeminded individuals can drift to extreme positions. On the other hand, we don't need to search for ways to upset people either. I'm against science being used as a political tool, but I'm also against using political interests to steer scientific progress.

PROFESSOR P. C. NEVERWRONG: I disagree, as I am not sure you fully understand the risks of misusing science. "Progress" sounds wonderful, but never at the cost of human dignity.

PROFESSOR LIBERTO FREEDMAN: Well frankly, I disagree too, as I don't think minorities need to be coddled. So what if someone has motivations we don't like—let the truth sort everything out—come what may.

ERNESTA PROVOKSI: Well if Richard Feynman truly considered his pen and paper to be integrated into the activity of calculating physics, then I don't see why in principle a person's skin couldn't be deployed towards certain ways of thinking. It would be helpful for the audience to hear how someone might link recent findings on visual processing to racial features like skin so that the debate has a context.

1.2 Cross-Modal Integration

CHATTER WARMISH: Well, studies have found that visual information modulates the subjective qualities of our other senses. I'll use a personal example: I love ice cream. Now if you asked me why I have favorite flavors, I would say because I adore how they taste. But surprisingly, science reveals that I don't only appreciate French vanilla for how it stimulates my taste buds, because if it failed to uphold certain visual standards that I have learned, then I would not perceive it as the flavor that I remember. This is counterintuitive, because I've never felt drawn to watching ice cream and I find it awkward to say that yellow #8 is a part of 'French vanilla'. Yet the science is solid that the visual data retrieved from how food looks alters its taste. In a way this is somewhat intuitive. Think about how a picture of a beautiful sandwich can make your mouth water, activate memories, inspire the imagination or trigger emotions and consider that these cross-modal interactions also happening all the time. Recall that on the extended cognition view of the mind, data entering our experience from different sense modalities can still be a piece of the cognitive loop we recognize as tasting blueberry ice cream. It follows that the flavor of blueberry is both in the color and in the molecules that comprise the ice cream. Phew... Now, if I am correct, the question is how the fact that seeing

information modulates our mental lives to the extent of having far-flung consequences for other areas of cognition—how does that impact our understanding of identity, given that persons have different skin colors. If, for instance, a simple alteration of color between white and blue causes cross-modal changes to our perception of a bite of ice cream, is it rational to assume that skin pigments have no impact on human cognition? Is it rational to assume that skin color does not change perception of ourselves or our environments?

PROFESSOR LIBERTO FREEDMAN: Well, if I may weigh in here... I would just like to say that if it turns out that LeBron James' talent comes in part from his skin complexion this should not bother us. As civilized adults, it should not bother us any more than variation in height amongst human populations.

PROFESSOR P. C. NEVERWRONG: Well, if I may add to that thought... You should be very cautious that that sort of idea can lead directly to the most pernicious scientific racism that is only steps away from attributing differences in test scores to skin color and skull morphology. I fully reject such speculation.

PROFESSOR LIBERTO FREEDMAN: Yeah well, I don't know. Kenya produces a lot of fast runners. What's so bad with that? It sounds like a good stereotype to be associated with and if examples pertaining to information that is encoded in the external environment are scientifically viable, then why should data that is encoded or processed by one's external body not be viable? The embodied cognition hypothesis suggests that an agent's body puts constraints on its interaction and perception of its environment.

PROFESSOR P. C. NEVERWRONG: The Irish, Italians and Russians were previously stereotyped for having innate physical prowess, until they caught up economically and even if skin pigment were correlated to other morphological traits like bone density and jaw length that would not prove that it is correlated to any differences in cognition... unless of course you think that their bodies themselves are differentially suited for cognitive processes. If you are trying to nudge us in that direction, then I should inform you that that direction already has an established name and it is called ‘backwards’.

PROFESSOR LIBERTO FREEDMAN: Yeah well, it sure seems like black music sounds black and mariachi music sounds Mexican. I never once mistook a mariachi band for a minuet or a blues song for a Polish folk song. Music is certainly cognitive though and natural selection did select for it in the same environmental conditions that selected morphological traits—so, those correlations aren’t arbitrary.

CHATTER WARMISH: Well maybe it is not an unassailable truth that color is entirely insignificant to cognition, but maybe it is also not quite as clearcut as these examples suggest at first glance. In fact, maybe this is where Dr. Neverwrong’s original interpretation of the question as one concerning culture becomes appropriate—as there may be some sort of feedback between culture and morphology in the way that Dr. Freedman suggests that causes morphology to be driven and filtered through cultural lenses.

PROFESSOR P. C. NEVERWRONG: That is interesting and I would be interested in hearing you try to balance between the two of us once again, but I am going to need to hear more about this statement.

PROFESSOR LIBERTO FREEDMAN: Yes, please if you will, do try to deliver more middle ground.

1.3 The Rubber Hand Illusion

CHATTER WARMISH: So if we consider the Rubber Hand Illusion... Wait, let me explain first. So a participant's hand is hidden and stimulated in the same manner as a visible rubber hand. After a while, participants start feeling that the rubber hand is theirs —this includes its position and movement in addition to sensations like texture, temperature and pain. Kinda like how phantom limbs can be painful for amputees, but instead of lacking a hand and feeling pain one feels for the fake hand. The degree of similarity one perceives in the experiments that use rubber hands of different colors predicts implicit racial bias. If a white person uses a hand that she perceives to be different, like a hand that she perceives as black, she will feel less of its sensations— researchers call that a reduced empathic response. For instance, the data suggests that she would feel less pain when hands that are darker than my actual hand are injured. But the differences are not arbitrary. People don't feel differently about random colors like purple hands —we feel differently about colors that are associated to race. They hypothesized that hands of the same color as the participant's raise the baseline effect by priming higher cognitive processes involved in body-ownership. So given that culturally specific beliefs are variably linked to skin colors, it seems reasonable to expect other mental

phenomena linked to visual perception to vary with the demands of culturally specific concepts and practices. On top of modulating self-identification and empathic response, skin color has also been shown to alter the perception of external objects... skin color even changes where participants perceive the location of painful stimuli applied to the rubber hand.

PROFESSOR LIBERTO FREEDMAN: Right so, if my skin color informs my brain ‘this is my hand’ such that it affects my feeling of self, then it would seem to be a part of my cognitive identity because this suggests that my skin is the site of the mental trait that philosophers call ‘mineness’. It seems that my complexion is linked to my sense of ‘mineness’ and hence that it is a part of my mind’s representation of its identity. But it wouldn’t end there... as my sense of bodily ownership is deeply connected to my senses of the external world. For example, my sense of ownership over my body affects judgments about the distance and size of external objects. So it is not inconceivable to me that some cultures recruit their skin colors into cognitive processes in ways that would impact their thoughts and reasoning about things and concepts that are not obviously related to color. I bet a blind bluesman who never saw his own skin still used the language and concepts that were designed by bodies with dark skin, so perhaps their ‘blackness’ was purely related to how their nervous systems integrated sensory data...

PROFESSOR P. C. NEVERWRONG: Aye, but not so fast... It seems more likely that the mind is quite malleable and if you got a tan or developed vitiligo that we would not want to say that you became someone else. As such I don’t see any reason to accept that your skin color is any more central to your identity that a hairstyle or professional uniform.

PROFESSOR LIBERTO FREEDMAN: Ok. It seems inevitable that we are going to end up discussing the metaphysics of personal identity, which is fine. But if that is the case then we really should settle the extent to which color perception matters to cognition broadly. Given that it affects my perception of self vs. environment I would venture to guess that the extent is deep-seated as far as cognitive tasks are concerned.

PROFESSOR P. C. NEVERWRONG: On the contrary, I would argue that the contribution of color is exaggerated and could probably be shown less impactful than other traits that we place less cultural emphasis on like visual transparency, opacity and luminosity or physical differences like the fact that humans display a massive variability in the number of rods and cones in their eyes—morphology and culture are connected.

1.4 Semantic Content in Visual Processing

CHATTER WARMISH: Both of you raise interesting points. But perhaps the way to balance between the two can be found in existing studies about color perception. On the one hand, it is true that color has far-flung consequences for perceptual processing. For instance, color modulates judgements about information that is derived by touch, including temperature and texture. Like, blue is implicitly linked to ‘cold’. These findings support the hypothesis that the metaphorical meanings associated with skin color contribute to thinking and perceiving via the other senses. On the other hand, given that different cultures divide visible light asymmetrically into different color categories—which are given different semantic associations—the linkage between perceived color and cognition is also malleable. It stands to reason that just as it was recently and

arbitrarily decided that pink is a feminine color, that the perceived hue of a person's skin can vary in its associated content, depending on the historical exposures of the perceiver. Children aren't born with the implicit association of blue to cold even if that is consistent across all cultures. We might not be able to say with certainty that skin color plays no big roles in cognition, but it might also be premature to say that its role is static...It is striking that this all seemed like rather boring science and empirical lab studies, until it was paired with an otherwise respectable theory of cognition.

PROFESSOR LIBERTO FREEDMAN: In other words, if the hypothesis of extended cognition is taken seriously, we might want to think of skin color as an optional resource to be deployed in the processing of other tasks.

CHATTER WARMISH: Actually, you don't need to commit to the extravagant hypothesis of extended cognition for the points you've raised. The more basic hypothesis of embodied cognition would suffice and be less controversial! Rather than saying that the mind can extend into objects in the environment, many more people are willing to accept that the mind is extended to parts of the agent's body besides the brain.

PROFESSOR LIBERTO FREEDMAN: Fine, but my point could even be made without reference to the skin's color. Just imagine you are a security guard and consider the fact that a body's movement style determines how others visually perceive its emotions, speed, motives and size. Well, if I approached you while moving my body in a way that looks threatening, your brain would see my size as larger than if my body moved calmly. Fear and expectation are deeply integrated into our perception of physical objects...

CHATTER WARMISH: Right, this is why arachnophobes overestimate the size and speed of spiders and acrophobic people overestimate the distance of heights.

PROFESSOR P. C. NEVERWRONG: Yes, where are you going with all of this? Are you suggesting that black people use their bodies for metamorphosis and that this is why studies have found that people overestimate their physical size? That can't be correct. It isn't as if spiders grow in size when they are feared.

PROFESSOR LIBERTO FREEDMAN: No! Let me finish... Suppose that a hypothetical culture's style of movement is more emotionally dynamic or more aggressive as a baseline than your hypothetical culture. It might be natural for you to see my body as larger because of how I move. Over time, if you learned to associate my motor tendencies with my skin's color, given the colocation of these differences, you might start to see other similarly colored bodies as larger too. I'm open to calling the latter case an optical illusion, surely. We know that every city walks at a different pace and that cultures walk with different average gait lengths. So maybe the reason people visually overestimate the size of black bodies has its origins in something like the motor tendencies from different cultures? If my motor functions directly modulated your subjective experience of things like my body's size and speed... my skin might get linked to that, perceptually speaking.

CHATTER WARMISH: Maybe you could have made your claim simpler by using an example where another person's skin color actively represents something for the observer, like temperature or empathy?

PROFESSOR LIBERTO FREEDMAN: Sure, that way of thinking fits the concept of a ‘perceptual affordance’. It may simply be the case that having darker hands delivers a better resource for certain tasks by virtue of perceiving a contrasting outline of one’s body against the physical environment or that possessing light hands is inherently less distracting while contemplating complex ideas with a pen. Difficult as it may be, we should accept the science. It is conceivable that skin color affords differences in processing information.

PROFESSOR P. C. NEVERWRONG: Again—I disagree with your interpretation. In fact, this way of thinking about skin color fits better with the notion of an ‘exploitive representation’, similar to the usage of one’s fingers for counting.. The idea is that a subsystem can perform its function without encoding and deploying a particular piece of information, if it is able to track that information another way. Take the example of a car’s odometer. One way for an odometer to track mileage is for it to track wheel rotations and multiply them by the equivalent number of meters. This involves encoding rotations as a number that can be retrieved and then computed to achieve the desired output. An alternative method is for the odometer to just add x meters to the count with each passing rotation. The latter method avoids needing to encode by exploiting morphology and environment. So it is actually not morphology, but the cleverness of an agent that matters here.

CHATTER WARMISH: To be fair, you are both stating related points, as ‘perceptual affordances’ require agents to first perceive them as affordances, whether they are environmental or bodily affordances... and likewise ‘exploitive representations’ require

morphological variations that can be exploited. So in essence, ‘perceptual affordances’ are the physical basis of an agent’s ‘exploitive representations’.

PROFESSOR P. C. NEVERWRONG: At least my account emphasized that even if the hypothetical scenarios described were possible, they would require a cognitive contribution.

PROFESSOR LIBERTO FREEDMAN: Well, that may be so. But that does not provide grounds for pretending bodily differences do not really exist.

PROFESSOR P. C. NEVERWRONG: Agreed, but then why the emphasis on color? It might be the case that other properties of visual cognition explain cognitive differences in cultural practices better than the literal interpretation of the color metaphors ‘white’ and ‘black’ in music.

PROFESSOR LIBERTO FREEDMAN: Frankly, color seems to be the most salient to the purpose of this conference given that people all over the world use it to refer to actual psychological attributes and practices. So I would like to resist the subtle implication that this is inherently racist or ignorant. And I mean this point only in relation to the embodied cognition hypothesis.

ERNESTA PROVOKSI: This is interesting. So one of my favorite musicians is Stevie Ray Vaughan. For those who don’t know, Vaughan was a white blues guitarist from Texas who grew up playing in bars and clubs, getting on stage with most of the legendary blues men of the 20th century while still a teenager. I mention him because on several occasions Vaughan confessed to his friends and bandmates that he considered himself a

black man in a white man's body. Now this expands the previously mentioned example of music to the use of skin color as a proxy for psychological traits in general. Can the three of you say more about this?

PROFESSOR P. C. NEVERWRONG: I admit it is tenable that the same skin color might be deployed differently in different cultural settings by having different semantic associations linked to its hue. In principle, the phenomenology of someone from a metropolitan city is probably closer to 'colorblind' than someone from an isolated village who has never seen other skin colors. But I dismiss that there are reasons to suspect anything is essentially linking any skin color to any of the psychological qualities that are reflected in ethnospecific forms of cultural and art which are labeled by colors. Generalizing any thinking style according to skin color is racist —by the classic definition.

PROFESSOR LIBERTO FREEDMAN: Well the case of Stevie Ray Vaughan is intriguing because it suggests that if there is a 'black' way of using one's skin then such a cognitive process could also be deployed with white skin, so long as it is engaged in a way that uses the skin, which is to say—perceives the skin, in the desired manner. And his case brings us back to the earlier emphasis on 'perceived color' regarding the rubber hand experiment and implicit bias. Where a participant does not perceive the skin as different, we do not find differences in the results. So the perception of skin color is linked to its availability for deployment in cognitive tasks. If Stevie Ray Vaughan acquired some different way of perceiving of his skin as an outcome of growing up in blues communities, well that might have a scientific explanation.

CHATTER WARMISH: Recent studies have confirmed that playing jazz music involves different brain processes than classical music on the same instrument. They also found that the brains of jazz pianists exhibited greater neurological flexibility for performing harmonies in unexpected ways, while the brains of classical pianists show greater awareness of how to perform melodic fingerings precisely. So there is some evidence already that the music people might typically associate with being black or white involves measurable neurological differences in the brain. So one thing that might also interest you is to consider how the musical scales that you grow up hearing sound natural and inherently ‘musical’, whereas all the other scales of the world just sound like something is off. I assume that if Stevie Ray Vaughan grew up playing the blues and moving his own body to patterns that emerged on a different continent than his white peers... there is adequate evidence that musical psychology is deeply integrated into how one perceives auditory and spatial settings without music. It does not seem far-fetched that his perceptual software and perhaps dispositions for motor control could have been learned from that community.

PROFESSOR LIBERTO FREEDMAN: But why would it be problematic to call that software black?

PROFESSOR P. C. NEVERWRONG: I suppose you might identify the software by its geographic history, but allowing racial categories to set the reference is too close to an unreflective endorsement of their conceptual legitimacy. For example, we call English ‘English’ because that’s the geographic origin of the tradition—but the name ‘English’ of the language does not refer to the morphologies of Englishmen.

PROFESSOR LIBERTO FREEDMAN: I see your point. Granted, I do not actually accept that Stevie Ray Vaughan himself was black ‘on the inside’. I reject this example because it is not convincing that he was not merely mimicking the music that he heard growing up like an actor performing a role as a bluesman. Why should we think this says something about him? I mean I can’t tell Jamie Fox’s impersonation from Ray Charles, but I know Jamie Fox is not Ray Charles.

CHATTER WARMISH: It counts for something that most of the black legends of the blues community hailed Vaughan for his contributions to the significantly ethnohomogeneous art form. Consider that B. B. King referred to him as ‘the new blood’ and Albert King referred to Vaughan as his son—even stating that Stevie was ‘the only white boy in the world whose got a black daddy’. For these musicians to point to Vaughan and credit him for carrying the torch of their heritage further lends plausibility to his statements. This seems to be more than mere mimicry.

PROFESSOR LIBERTO FREEDMAN: Hmm. I grant that B. B. King and Albert King probably would know better than me and given the historical origins of the music in slave songs, I doubt that they would bestow such praise on a white artist without meaning it seriously. Nevertheless, the fact that many of the greatest blues musicians were blind still undermines this discussion. If Stevie Ray Vaughan’s mind was ‘using’ his skin in a black way based on a learned style of visual processing, then what was Ray Charles doing? What about Blind Blake, Blind Willie Johnson, Blind Boy Fuller and Blind Willie McTell? I need more proof before I can accept that there’s numerous varieties of

cognitive software floating out there, besides languages and musical traditions. Or is Stevie Wonder less black ‘on the inside’ than Stevie Ray Vaughan was?

PROFESSOR P. C. NEVERWRONG: I’m glad you brought up the question about blindness in the context of this discussion. Actually, I think it supports a more optimistic reading, so I’ll say why. First of all, it seems there is a need to emphasize that all along we have been discussing how sensory inputs, like vision, are integrated into cognitive processing—which is different from saying that they alone are active. This is why cognitive science involves many areas of study. We simply must pursue these questions from an interdisciplinary viewpoint if we are to make any progress. OK. So there’s actually a lot of revealing data from comparative linguistics that suggests that West African language systems deploy different configurations of embodied metaphors to reason about things like personal identity, ethics and epistemology. Indeed, there are lots of peer-reviewed publications comparing how the Anlo-Ewe people conceive of sensory evidence in terms of somatic experience in ways that rival how we—speakers of Western languages—are accustomed to metaphors based in visual experience. So rather than our concept of ‘eye-witnessing’ an event they would essentially ask if one’s body was present. To say “That’s the Truth” in Anlo-Ewe translates literally to saying “The word is at its place”—truth is associated with one’s proprioceptive location. Whereas we consider the statement ‘seeing is believing’ intuitive, speakers of these languages would be more inclined to find ‘balancing is believing’ or ‘nearness is believing’ intuitively true. So if there is something like a black style of thinking, it is unlikely to be dominated by visual experience, but instead, likely finds expression across multiple modalities of experience.

There are dozens of well-known and well-studied examples in cognitive linguistics of cultures that have different conceptual frameworks for abstract concepts like time, spatial orientation and selfhood. What makes these cases a bit different is that they concern epistemic and perceptual notions.

CHATTER WARMISH: That is quite interesting. Perhaps there is something more to the phrases that we associate with black music like ‘having soul’ or ‘getting into a groove’ that we could benefit from identifying explicitly in cognitive terms.

PROFESSOR LIBERTO FREEDMAN: But surely you aren’t both sold on the idea that Stevie Ray Vaughan was ‘black inside’? I could learn Cantonese in a year, but I can’t be more Chinese by next year’s conference. I was born from a specific sperm and egg. Even if I lost all of my memories, I would not become someone else—I am essentially this organism, narratives come and go, but I only get one brain.

ERNESTA PROVOKSI: Very interesting. It seems our conversation now depends on commitments to positions about personal identity in metaphysics. I would like to ask the panel whether you believe that you have your body’s origins essentially? Is it possible that you could have come from a different sperm and egg if all of your thoughts, memories and dispositions were copied to an indistinguishable body?

CHATTER WARMISH: Well to put this into a broader context, the psychological view of personal identity is considered to have started with John Locke’s distinction between persons and bodies. Locke defined the person as a conscious subject that is psychological in nature, in contrast to the body which is a material system that is biological in nature.

This distinction is rejected by the biological view of personal identity, which considers persons identical to bodies. These two views of what persons are assign different senses of the term 'person', both of which are common today in ordinary speech. The psychological view has a complex relationship to the idea of race. On the one hand, given that the view is consistent with persons switching between bodies of different races, psychological persons seem to not have the race of their bodies essentially. On the other hand, the statement 'X is a black person' can also have interpretations that are psychological. This is to say, that it might attribute psychological traits to persons or explain the psychological traits of persons (e.g. behaviors, preferences, abilities) in terms of race.

PROFESSOR LIBERTO FREEDMAN: I endorse the bodily view and I'd like to point out that we have strayed far from the discussion of embodied cognition and skin color, so my answer will address both topics. See, if I have white skin and you have black skin and these skins are used for cognitive tasks then the most you're going to convince me of is that there is something white about my mind and something black about yours. It is unsettling, but we are confronted by the possibility that nature plays a bigger role than nurture and that not even cognition escapes biological determinism. It is still in the cards that applying the embodied mind view to the topic of visual morphology proves that how you look and the color of your skin are more important than we realized. You're not going to be able to say that Stevie Ray Vaughan, the person, was black or anything like that. So my answer is that a white person with white genes is white. Let's not throw away the entire concept of genetics over one hypothetical question.

PROFESSOR P. C. NEVERWRONG: Well the term ‘genetic’ comes from the Ancient Greek word ‘génésis’ for creation or birth. In the most basic sense, a thing’s genetics is a matter of the relationship between its content and origins. So whether or not a thing has genetic properties is substrate neutral, because any information bearing system with a causal history can be thought of as having genetic properties. This functional meaning of ‘genetic’ predates its association with the molecular structures found by Watson and Crick. The reason that the genetic role of DNA is significant is because of its function, not because the particular substances that comprise it are inherently genetic. The ‘gene’ is not the DNA molecule, it’s the information that is coded. This is why researchers propose units as ‘meme’s to conceive of cultural inheritance and psychological lineages.

PROFESSOR LIBERTO FREEDMAN: That’s well and good, but still a white person with white parents can’t be ‘black on the inside’ in any meaningful way. That’s an overreach of metaphor and ignores the facts of DNA. Race might be socially constructed, but you can’t just change the reality of your biological genes because you think that ‘persons’ are psychological in a metaphysical sense. I don’t care if it hurts, let’s get real.

PROFESSOR P. C. NEVERWRONG: “It is a mistake to identify genes with their vehicles in DNA. The idea that evolution is an algorithmic process is the idea that it must have a useful description in substrate-neutral terms... It cannot be ‘memes versus us,’ because earlier infestations of memes have already played a major role in determining who or what we are. The ‘independent’ mind struggling to protect itself from alien and dangerous memes is a myth. There is a persisting tension between the biological

imperative of our genes on the one hand and the cultural imperatives of our memes on the other, but we would be foolish to ‘side with’ our genes.

ERNESTA PROVOKSI: Unfortunately, we are running short on time. Would anyone care to summarize the progress we’ve made on these issues?

1.5 Closing Summary

CHATTER WARMISH: Sure. At First it seemed the very suggestion that skin color is involved in cognitive activity was unsettling. It revealed the striking possibility that the tasks one performs with one’s body are influenced by the color of one’s skin. But over the course of thinking these ideas through, we’ve grown more comfortable with the consideration—because it is not necessary for us to say that skin color is completely insignificant to cognition to preserve what mattered about our previous assumption.

ERNESTA PROVOKSI: How is that? Please explain what you mean when you say that we’ve uncovered a way to integrate the important part of the previous view into this new perspective.

CHATTER WARMISH: The initial reaction to considering skin color’s impact on cognition was based on a false dichotomy between nature and nurture. The suggestion even seemed to risk reducing all of ones behavior to inherited nature. But we are still dealing with perceptual software that is transmitted by culture. So it remains possible to defend the view that persons are not determined by their bodies and that the colors we see in their skin are not important— because colors perceived in skin are as dependent on the perceiver’s mind as they are on physical morphology. As with the earlier example of

music, someone who is used to hearing only Indonesian folk songs will not perceive Western classical music as musical as the trained ear and vice versa; the same principle applies to the eye. In both listening to music and looking at skin, the memes that have shaped our memories, expectations and preferences will also shape how new instances appear to us, which is variable and independent of physical sound waves and skin pigments. Both of the original questions were about race, but Dr. Neverwrong's first response that the interest should have been culture's influence on perception is now vindicated. But it is also good that we did not know this would happen, because going through the difficult conversation provided a stronger understanding of why a person's cognitive identity is not determined by their body. For example, we might intuitively want to suppose there is a connection between Mexicans and mariachi music, Jamaicans and reggae music or Indians and raga music. But this intuition that certain cognitive attributes are 'in the blood' of a people is derived from the fact that perceptual software is transmitted by lines of inheritance, just like literal traits in the blood. So the perceptual tendencies, language systems and other mental traits that we associate with Mexican, Jamaican and Indian persons are independent of the morphological traits that are associated with those populations.

ERNESTA PROVOKSI: Well then... Well, that's all we have time to discuss this evening. Would everyone please join me in giving a rubber handful of applause for our generous speakers.

Chapter 2

Skin and Visual Feedback

Over the last two decades, important links have been found between the processing of visual information from one's external body and subjective experiences of various kinds. An experimental approach that has contributed greatly to the understanding of these connections is the Rubber Hand Illusion. The illusion is induced by stroking the participant's unseen hand in the same manner that a visible rubber hand is stroked. The illusion is measured along two dimensions of embodied experience: (1) proprioceptive drift and (2) the sense of bodily self-ownership. By proprioceptive drift scientists mean the phenomena that occur when subjects begin to report the actual location of their hand as being closer to the rubber hand. Researchers define the sense of bodily self-ownership as the phenomena that occur when subjects begin to subjectively identify with the visible hand as an extension of themselves. The fact that these sensations can be induced despite participants being aware of the illusion suggests that the Rubber Hand Illusion (Hereafter RHI) is revealing of deep-seated mental processes .

In the recent literature about the RHI, there is a divide over the importance of visual similarity between the rubber hand and the participant's hand. On one side, researchers deny that perceived similarity increases the effectiveness of the illusion. For instance, Longo (2009) and Thakkar (2011) suggest that embodiment increases the perception of similarity, whereas perceived similarity does not aid embodiment. But on the other side, researchers have argued that the perception of similarity increases the effectiveness of the illusion, as perceived similarity is a predictor of performance on both

measures of embodiment that are tracked in the RHI. Decreased perception of similarity has been linked to implicit racial bias, both of which are predictors of the effectiveness of the RHI. White participants who score higher on implicit bias tests report a delayed illusion with less intensity when using black rubber hands. Avenanti (2010) found that white participants displayed a reduced sensorimotor resonance, a neurological marker of empathy, when pain was inflicted on black hands. The authors concluded that stereotypes and racial bias reduce the otherwise natural empathetic reactions by normalizing an outgroup specific lack of sensorimotor resonance. This hypothesis is supported by the fact that neither white nor black participants react to purple hands as outgroup members. There is agreement that differences in skin color does not prevent the RHI from occurring, but skin color affects both the character of the experience and patterns of neurological engagement. Farmer (2012) demonstrated that the sense of body-ownership over rubber hands varies depending on whether they are black or white. These studies did not find any link between skin color and proprioceptive drift, but subsequent tests revealed a connection. For example, Lira (2017) found that skin color affects this aspect of embodiment

Displacement induced by the black [rubber hand] was 44% smaller than the displacement induced by the white RH... the reduced proprioceptive drift observed for the black RH may be revealing of the difficulty of fitting this hand into the participant's white-represented body schema... We found that greater prejudice was associated with a shorter experience of the illusion, which in turn resulted in less proprioceptive drift and a lower reported experience of the magnitude of illusion. (Lira 2017, page 10)

In this study participants reported the experience of the RHI as more vivid when the rubber hand was white, than when it was black. The researchers hypothesized that hands of the same color as the participant's might raise the baseline effect by priming higher cognitive processes involved in body-ownership. This hypothesis is consistent with the view that baseline levels of embodiment are culturally and individually variant. For example, a 2017 study found that both black and white participants perceived black men to be larger, stronger and more threatening than white men of the same size. Given that culturally specific beliefs are variably linked to skin colors, it is reasonable to expect other mental phenomena linked to visual perception to vary with the embodied demands of culturally specific concepts and practices. In addition to modulating self-identification, proprioceptive drift and empathic response, skin color has also been shown to alter the perception of external objects. The important question here is how to put these findings into their proper context. On one hand, it is clear that skin color does affect cognition in ways that are very particular. On the other hand, one might argue that similar things could be said about linguistic differences. For now, it is clear these findings show that skin color is integrated into basic cognitive processes in unexpected ways. Among other effects, Farmer (2014) found that skin color changes where participants perceive the location of painful stimuli applied to the rubber hand.

Alongside the RHI, an emerging research paradigm that has advanced our understanding of the role of visual feedback in embodiment is the use of virtual avatars. Recent studies have demonstrated connections between the visual transparency of one's body and the sense of self-ownership over that body. In a study conducted by Martini et.

al (2015) virtual avatars were used to give participants the experience of occupying bodies. It was found that the sense of bodily self-ownership relies on cues derived from the visual observation of the properties of the external body (e.g. its qualitative appearance). For instance, greater levels of visual transparency were linked to lower levels of bodily ownership. 'Visual transparency' is definable as the property that an object has to the degree that it reveals what is behind it by allowing light to pass through its surface, the paradigmatic example being a glass window. This makes transparency a separate visual cue from color and the opposite of the visual cue of opacity (sometimes referred to in the literature as visibility). Greater sensations of bodily ownership were also linked to increased pain sensitivity, but making the body invisible (i.e. completely transparent) did not lower sensitivity to pain. The researchers argue that experiencing unpleasant emotions towards one's body contributes to lowering the pain threshold. Their hypothesis is that owning a body with negatively valenced visual properties promotes negative feelings toward the body that influence pain perception negatively. This is supported by multiple studies revealing that blacks have lower pain thresholds than whites, as well as decades of findings that blacks and whites have negatively valenced feelings towards black bodies. These findings are also consistent with studies linking unpleasant emotions towards magnified images of one's hand to lower pain thresholds.

These findings suggest that skin color is integrated into basic cognitive processes in unexpected ways. A study by Martini et. Al (2013) found that the vision of different skin colors has a direct affect on the pain threshold. They found that showing subjects virtual limbs becoming increasingly blue increased the pain threshold compared to virtual

limbs that were becoming increasingly red. The experiment tested if seeing colors associated with temperatures modulates the experience of heat, cold and pain. This contributed to previous studies that have found, for instance, that red visual cues hurt more than blue visual cues, red lighting raises sensitivity to cold pain (compared to white light) and green lighting raises pain thresholds while increasing sensitivity to warm stimuli. They concluded that the meaning given to colored cues plays a role in pain and temperature perception, as reddened skin can convey the arm is getting damaged by heat while an increasingly blue arm can convey the opposite. They suggest that the physical link between these colors and the visible effects of thermoregulation affect the oxygenation of blood by hemoglobin, rendering skin red or blue. They argue that the fact that green is not related to any temperature directly is why the pain threshold is not affected by green to the extent that it is by red and blue. Interestingly, they found that the links between color and temperature produce reversed outcomes depending on whether the color is located on the body or on external objects. For example, blue objects have greater likelihood to feel warm than red ones, but red hands have a higher likelihood of perceiving the same stimuli as cold than blue hands. Earlier studies such as Durgin (2007) found that blue light shone on the hands of subjects or embodied rubber hands produced a cooler thermal sensation than red light beams. This study also found links between the colors associated with thermal properties and the pain threshold, noting that “the vision of the blue arm led to a higher pain threshold compared to the one reported in the red arm condition. Given that skin color modulates perception of both self and

environment, it is conceivable it can also explain other cognitive differences between whites, blacks and other groupings that are based on color.

The findings discussed in this section suggest that skin color and visibility are integrated into basic cognitive processes in unexpected ways. Given that the impact of these visual cues is preconscious, it is arguable that moving through the world with color cues built into one's skin is functionally to carry them as a part of one's cognitive identity. Perhaps it is also tenable that these basic level color associations are the perceptual building-blocks of racial categories. The following section raises the philosophical views on opposing sides of these potential arguments. carried out by specific types of systems that are capable of encoding and passively retrieving symbolic representations of the world. As a result, it argues that the mind is comprised by informational structures internal to brains and nervous systems. A rival conception of the mind argues that cognitive systems include bodily and environmental realizers, coupled to the minds of organisms. This view, called wide computationalism, argues that as a result of coupling, the site where an organism's mental affairs are realized is unrestricted to neurological hardware. This chapter discusses two versions of wide computationalism, centered around the theses that cognition is embodied and that cognition is extended. In recent decades, increasing numbers of philosophers have argued that popular support for computationalism requires unsupported assumptions. For example, Wilson and Clark (2009) argue that the traditional assumption that cognition starts and ends inside the skull is unproven

Why think that the skull constitutes a magic boundary beyond which true computation ends and mere causation begins? Given that we are creatures embedded in informationally rich and complex environments, the computations that occur inside the head are an important part but are not exhaustive of the correspondent computational systems. This perspective [(viewing representation as an active and exploitative process)] opens up the possibility of exploring computational units that include the brain as well as aspects of the brain's beyond-the-head environment. (Wilson and Clark 2009, page 6b)

According to the embodied cognition hypothesis (hereafter EMB) the sites where mental states, processes and representations are realized are often located throughout an agent's body. According to the extended cognition hypothesis (hereafter EXT) the supervenience site where mental states, processes and representations are realized is often within the agent's body or environment. These approaches affirm that it is tenable that skin color is integral to cognitive identity, as the question of whether a person's skin has a role in their computational economy fits the standards characteristics of its most common examples. Adams and Aizawa (2008) clarifies that the important point raised by EXT is not that cognitive processes are "causally dependent" on environmental processes, but that cognitive processes are "constitutionally dependent" on processes spread between the brain, body and environment. For the sake of this discussion I reject EXT, because I deny that the case for constitution as opposed to mere causality has been sufficiently proven. My view only involves a commitment to EMB. In a sense, EMB is a limited version of the EXT, as EMB literally distributes minds throughout the bodies of organisms (but not necessarily into the bio-external environment). EXT argues that cognition is realized in the environment, so that the explanation of an agent's intelligence and experience should reference the world or how the agent interfaces with the world. Rather than being realized

by internal representational structures, it is argued that human mental states can be realized “by structures and processes located outside the human head.” This is not merely to say that human cognition is sometimes reliant on external markers for help, but that physical machinery of the human mind extends out into the world, as Clark puts eloquently, “beyond the bounds of skin and skull.”

Both versions of wide computationalism suggest that the world outside the skull contributes to cognition. Recall that EMB argues that non-neural parts of the body can belong to the loop of mental processes. This is a departure from the traditional view of mental representations. Traditional ‘narrow’ computationalism defines cognition in terms of passive retrieval, whereas EMB argues that goal-directed actions are primary to cognition. Such goal-directed actions are not characterized by representations in an organism’s brain, but by sensorimotor representations that are delivered to it (as a result of its part in the coupling). EMB rejects the study of cognition as an internal phenomena and suggests that a better analysis will include knowledge of the body and environment where mental phenomena unfold. For comparison, traditional computationalism suggests that representations are “internal states of arbitrary form” that stand related to external events, when operated upon by the correct rules.

Andy Clark argues that wide computationalism offers new and illuminating viewpoints to the mind and cognition that equip us to stop giving unreflective “privilege [of] the inner, the biological, and the neural.” David Chalmers (2008) defines EXT as the thesis that “when parts of the environment are coupled to the brain in the right way, they become parts of the mind.” Perceived skin color qualifies as a mental extension if it

influences actions in the right sort of way to be considered cognitive. Most wide computationalists define the status of being cognitive in terms of function. Chalmers explains that his criteria for recognizing external traces as the physical vehicles of mental contents is whether they function as extended supervenience bases for dispositional beliefs. He concludes that if the external traces function in the same kind of way as internal memory traces, then there is no good reason to withhold crediting them as parts of the relevant mental loop. Clark (2011) details the example of external traces given in the self-reports of Richard Feynman, who considered his pencil marks worked out on physical paper to be essential to his own theoretical work when doing physics. These pencil marks are candidate vehicles for cognitive states on the wide computationalism view.

Feynman's suggestion is, at the very least, that the loop into the external medium was integral to his intellectual activity itself. But I would like to go further and suggest that Feynman was actually thinking on the paper. The loop through pen and paper is part of the physical machinery responsible for the shape of the flow of thoughts and ideas that we take, nonetheless, to be distinctively those of Richard Feynman. (Clark 2011, page xxv)

Clark denies that the reasons given for why the functionality of the loop that includes Feynman + Pen + Paper should not be listed by the account of the relevant cognitive circuitry. Clark suggests a second example of extended cognition in the story of an Alzheimer's patient named Otto. Because of his neurological condition, Otto's memory is severely limited. To compensate, he keeps a notebook with him to keep information. If he decides to go somewhere (e.g. to attend a museum exhibit) he uses the notebook to preserve and retrieve information, such as where the building is located. Despite this,

Clark argues that Otto is capable of believing that the museum is on 53rd street in the same way that any ordinary person could possess the belief. He gives the example of Inga, a woman with normal memory, who simply goes to the museum upon hearing about the new exhibit without writing anything down. The difference is that Otto is part of a coupled system with his notebook; even if he has not stored the belief that the building is on 53rd street in his brain, the system believes that the museum is on 53rd street before Otto checks his notebook. Similarly, Inga believes that the museum is on 53rd street before she consults her neural storage to make the belief occurrent. Clark explains that Otto's beliefs do not vanish when his notebook is closed anymore than Inga's beliefs vanish when she is not consciously thinking about them. Functionally speaking, they stand in the same relation to the information that is stored, which is sufficient to say that they possess the same belief.

Embodiment theorists argue that the 'leakage' of mind outside of the brain benefits agents by spreading the problem solving load between morphology, action, environment and behavior. This helps the agent manage control and learning more efficiently. Clark explains that one route is for the sensing body to recruit itself as a resource within the problem solving economy. Bodies lend themselves to the 'problem solving economy' by providing an additional resource to apply towards processing tasks, like the perception of distance and size. Shapiro (2014) writes

Eye height provides the unit for measuring the height of an object (e.g. it's about as tall as I am), the hand is used for scaling graspable objects (I can easily grasp it), the length of the arm scales reachable objects in peripersonal space (I can reach it), and the amount of effort needed to traverse a distance is used as a

measure of that distance. (Shapiro 2014, page 212)

Lungarella et al. (2008) discovered that the ability to self-generate sensorimotor activity complements neural information processing. For example, they found that when moving one's body to see and manipulate an object, the agent's embodiment assists in perceiving it as separate from its environment. Having an embodiment confers the advantage of the availability of time-locked visual and motor percepts of the object, which create further information about its boundaries when combined or compared. In this way, the body (e.g. an infant or robot arm) enables the agent to act. Yet it also simplifies the agent's calculations by virtue of its own morphology. Whereas lacking an embodiment requires the same benefits to be accomplished by additional computational processes. Clark (2011) explains

In human infants, grasping, poking, pulling, sucking, and shoving create a rich flow of time-locked multimodal sensory stimulation...The key to such capabilities is the robot's or infant's capacity to maintain coordinated sensorimotor engagement with its environment. (Clark 2011, page 17)

This point is very relevant to the considerations of skin color and temperature discussed in the previous section. Embodiment permits agents to act on their worlds to produce time-locked patterns of sensorimotor stimulation. These multimodal input streams assist category learning and concept formation. Clark (2011) quotes (See Lungarella and Sporns, 2005, page 25) that this approach to gathering information is self-structuring

The agent's control architecture (e.g. nervous system) attends to and processes streams of sensory stimulation, and ultimately generates sequences of motor

actions which in turn guide the further production and selection of sensory information. [In this way] “information structuring” by motor activity and “information processing” by the neural system are continuously linked to each other through sensorimotor loops. (Clark 2011, page 17)

Another route taken for mental ‘leakage’ occurs when the body integrates bioexternal resources into a computational routine (e.g. a blind person using a walking stick to navigate spatially). Additionally, if bioexternal resources are integrated deeply enough into calculations, they can become embedded in involuntary cognitive tasks that do not activate the brain (e.g. a cellist whose fine motor skills are controlled by her peripheral nervous system).

A way for wide computationalists to suggest that skin color is a part of the mind is to argue that it is recruited by embodied mental processes. By saying that a cognitive process is embodied, one indicates that its complete explanation will reference features of the agent’s body as part of the active processing loop. Degrees of embodiment exist, but saying that an agent is embodied (at all) means there is a nontrivial exchange between its potential thoughts and its world. The extent to which embodiment occurs is considered to vary in terms of degrees, meaning that some processes and organisms are considered “more embodied” than others. Fong et al, (2003) explain that because the basis of embodiment is in the relationship between an agent and its environment, the more an agent can perturb its environment and be perturbed by it, the more it is embodied. Michael Dawson (2014) proposes that the criteria for saying that one agent is more embodied than another shall rest on whether it is “immersed in higher degrees of feedback.”

Embodied cognitive science emphasizes feedback between an agent and the world [that] is structured by the nature of an agent's body... An agent's body places constraints on how the world is experienced (Umwelt) as well as on how the world is acted upon (affordance). This in turn suggests that agents with different kinds of bodies can be differentiated in terms of degrees of embodiment. Embodiment can be defined as the extent to which an agent can alter its environment... (Dawson in Shapiro 2014, page 62)

Different bodies offer different affordances to agents. Bodily differences enable embodied agents to perform differently, to perceive differently and to deploy different concepts. Narrow computationalism overlooks the diverse combinations of exchange that are possible in this way, which Dawson exemplifies by analyzing the embodiment of bat echolocation. Objects can easily be located in terms of horizontal position, if a sound arrives at a bat's left ear before its right ear, but not vertical position. Morphologically, it is easy to explain how the bat's ear determines the vertical position of prey at all seems to need an explanation. As such, the traditional assumption would be that there is a neurological computation to determine verticality, that the bat compensates for the poverty of information with its brain. His point is that the bat's embodiment solves the problem with unique affordances by the shape of its ears. The cognitive process of the bat's hearing is more embodied than it would have been if the prior assumption had been correct—if it had relied more on neurological computation. Embodiment can be considered comparatively between individual agents and individual processes, Dawson adds “The more embodied an agent is, the more interesting its potential architectures that can be used to account for its cognitive processing.” Since its ears are shaped in a complex manner that filters and distorts echos to extract additional cues to determine

vertical placement, the cognitive process is realized to a greater extent by morphology than anticipated by narrow computationalism. It is worth noting that the extent of an agent's embodiment is not determined at birth, but is negotiated between its body, environment and itself. An agent might learn different ways to perform the same external task that differ in the recruitment of the body. Indeed, some blind people learn to employ something like sonar by making sounds that bounce off objects in their environment. On this topic, it is worth noting that the agent's embodiment is not completely determined by its body either, given that there is a developmental fluidity to the relationship between body, agent and world. It would be false to say that the bat's embodiment is greater because of the way its hearing works, than if those processes happened in its brain—the particular cognitive process, hearing, is more embodied than if it all unfolded as computations inside the bat's brain.

Chapter 2.1

Background

Computationalism, the long-established approach to cognitive science, maintains that bodily and environmental states only serve as the inputs of cognitive systems. This view denies that the body or environment beyond the brain are directly involved as components of the mind's machinery. That is to say, computationalism denies that the body or world are capable realizers of cognitive states.

There is a longstanding practice of categorizing mental acts into colors. As we

have seen, it is true that perceived color plays a significant role in many cognitive processes. This is even true of the most basic perceptual experiences that we have of the environment. For instance, a study by Ho (2014) titled ‘A Blue Object is More Likely to be Judged as Warm than a Red Object’ found that color modulates judgements about information that is derived by touch, including perceived temperature. Tests conducted by Moseley and Arntz (2017) also confirmed that red is linked to ‘hot’ and blue is linked to ‘cold’. These findings support the hypothesis that the metaphorical meanings associated with skin color contribute extensively to thinking as well as perceiving. Given that different cultures divide visible light asymmetrically into different color categories—which are then assigned different semantic associations—the linkage between perceived color and cognition is malleable. In principle, it stands to reason that just as it was recently and arbitrarily decided that pink is a feminine color, the perceived hue of a person’s skin should vary in its associated content, depending on the historical exposures of the perceiver.¹

The findings discussed in this section suggest that skin color and visibility are integrated into basic cognitive processes in unexpected ways. Given that the impact of these visual cues is preconscious, it might provoke the worry that moving through the world with color cues built into one’s skin is functionally to carry them as a part of one’s cognitive identity. One might also worry that these basic level color associations are the perceptual building-blocks of racial categories. There are two cases to make for why

¹ For example, a culture that did not distinguish red from pink might find it unnatural and awkward to decipher why a pink slipper is considered ‘girlier’ than a red slipper—like how non-speakers might wonder why the German language addresses human babies as gender neuter, seasons as gender masculine and philosophy as gender feminine.

these worries are unnecessary. The first potential case is that other aspects of visual cognition explain cognitive differences in cultural practices better than color. The second case is that those more important properties of visual cognition are integrated with the other senses in ways that are mediated by language and concepts. Either approach would be enough to prevent skin color from being directly tied to differences in cognition. The alternative, which I would not endorse, is that skin color is directly tied to differences in cognition in a way that is not mediated by culture. This would involve saying that how differences between white and black skin are perceived in the brain are the same as differences in how red and blue are perceived in the brain. I reject this for multiple reasons. One important reason is that speakers of different languages consider the boundaries between color categories to encompass different ranges of hues. Hardin (2013) explains

A well-established basic megacategory in many North American and Mesoamerican Indian as well as some African languages is a “grue” term that covers the region that English speakers would separate into a blue and a green category. English, in turn, has its own megacategory. Modern Russian speakers break up our blue category with two BCTs: goluboi, light blue, and sinji, dark blue. (Hardin 2013, page 2)

The visual cues discussed in relation to color were proprioceptive drift, bodily ownership, temperature, perception and pain thresholds. These are also linked to visual transparency, a trait that is more deeply linked to search and attention than color. Visual transparency is definable as the property that an object has to the degree that it reveals what is behind it by allowing light to pass through its surface, the paradigmatic example being a glass window. This makes transparency a separate visual cue from color and the opposite of the

visual cue of opacity (sometimes referred to in the literature as visibility). Alongside the Rubber Hand Illusion, an emerging research paradigm that has advanced our understanding of the role of visual feedback in embodiment is the use of virtual avatars. In a study conducted by Martini (2015) virtual avatars were used to give participants the experience of occupying bodies. It was found that the sense of bodily self-ownership relies heavily on cues besides color. Higher levels of visual transparency were linked to lower levels of bodily ownership. Greater sensations of bodily ownership were also linked to increased pain sensitivity. The researchers argue that experiencing unpleasant emotions towards one's body contributes to lowering the pain threshold. Their hypothesis is that owning a body with negatively valenced visual properties promotes negative feelings toward the body that influence pain perception negatively. This is consistent with other studies revealing that blacks have lower pain thresholds than whites, as well as decades of findings that blacks and whites have negatively valenced feelings towards black bodies. What is important is that these findings about the emotional valence and phenomenal transparency of one's body are not dependent on color directly. Instead, the associated negative emotions like fear and the availability for attention play a much larger role. These findings are also consistent with studies linking unpleasant emotions towards magnified images of one's hand to lower pain thresholds. This supports the view that the meanings of associations to skin color are heavily mediated by culture.

You might think of skin as an optional resource to be deployed in the processing of other tasks, similar to the usage of one's fingers for counting. This fits with the notion of an 'exploitive representation' as stated by Robert Wilson (2009). Wilson's idea was

that a subsystem can perform its function without encoding and deploying a particular piece of information, if it is able to track that information another way. He uses the example of a car's odometer. One way for an odometer to track mileage is for it to track wheel rotations and multiply them by the equivalent number of meters. This involves encoding rotations as a number that can be retrieved and then computed to achieve the desired output. An alternative method is for the odometer to just add x meters to the count with each passing rotation. The latter method avoids needing to encode by exploiting morphology and environment. But it would be mistaken to overemphasize the contribution of the skin's perceived color—as perceived color depends on conceptual categories and is less basic and consistent than other visible properties of the external body (i.e. opacity).

As we have seen, a simpler view than that the mind is extended into the world beyond the body is that mental processes are spread throughout the agent's body. This is known as the Embodied Mind Hypothesis. Different bodies afford different perceptual opportunities to agents (e.g., eye height of giraffes). Bodily differences enable agents to perform differently, to perceive differently and to deploy different concepts. Michael Dawson exemplifies this by analyzing the embodiment of bat echolocation. Objects can easily be located in terms of horizontal position, if a sound arrives at a bat's left ear before its right ear, but not vertical position. It is hard to explain how the bat's ear determines the vertical position of prey at all. The normal assumption is that there is a computation for verticality, that the bat compensates for the poverty of information with its brain. Dawson rejects this by arguing that the bat's embodiment solves the problem

with unique affordances provided by the shape of its ears. This would make the bat's hearing 'more embodied' than it would have been if the normal assumption were right—if it relied on a computation. Embodiment can be considered comparatively between individual agents and processes, Dawson adds “The more embodied an agent is, the more interesting its potential architectures that can be used to account for its cognitive processing.” Since a bat's hearing recruits how its ears are shaped to pull cues about verticality, the process is more 'embodied' than expected. An important point here is that the body is not more embodied. It would be meaningless to say this.

Chapter 2.2

Conclusions

One way to reject the view that has been developing is to dismiss the embodied mind hypothesis in relation to skin color as irrelevant to psychological identity. This would be insufficient. It would involve suggesting that the important issue is not if skin color is a potential carrier of mental states, but if the states depended on the carrier in the right way. There are two potential ways of trying this. (1) You might argue that the list of things that might carry mental states is too long to take seriously for personal identity. Finger nails, nose hairs and pheromones might all slip into some extended cognitive loops. If socially constructed categories (e.g., the thickness of nostril hairs in populations) were used to group people, then the same alarming patterns could emerge that seemed worrisome about skin color. (2) You might say the identity of persons is as separate from perceived colors as the identity of bodies are from flakes of dandruff. In both cases, the thing's

constitution is distinct from its identity. When Feynman did physics or when Shakespeare wrote, the content encoded mattered to the identity of their abstract and fictive creations, but not the vehicle (e.g. the alphabet). If the font of this sentence is involved in an extended loop, it is not essential to the sentence's identity in the way that we care about. Like fonts, the realizers of mental states are not identical to the content that they encode. Similarly, a story might be written in ink, spoken in sounds or flashed in pixels, but the identity of the fictional tale is separate from the historical facts about pages of paper. We typically accept that stories can be translated, songs can be remastered and paintings can be restored without becoming different works of art. It is also true that Beethoven was still 'Beethoven the composer', whether he used his ears, eyes or somatic awareness of his hands to compose.

Accepting that skin color is a potential resource for cognitive judgments (e.g. about temperature or pain) is compatible with rejecting the idea that skin color is a part of cognitive identity. I do take the evidence we have covered to show that perceived skin color, along with other visual tendencies and attentional biases, are a part of cognitive identity. This means that psychological identity has interesting connections to skin color that are cultural and social in nature. Psychological identity, with different perceptual and cognitive dispositions, as well as things like thresholds of pain sensitivity, may be bound up with embodied identity through the mediations of culture. This makes it false to say that the physical color (defined by wavelength) of a person's skin is a part of their cognitive identity. For neurological reasons discussed in later chapters, we do not perceive the physical wavelengths as unmediated color values. This means that having a

‘black’ way of thinking would in principle be as objectively measurable as having a Korean style of processing visual information, but only if it referred primarily to something with a psychological basis like the case of Korean language—which also affects one’s relationship to their body and environment, regardless of their actual ethnicity. So on one hand, the problem that will be need to be sorted out carefully is what (if anything) are the referents of folk terms such as ‘Asian-ness’, ‘white-ness’ or ‘Korean-ness’ in ordinary cases (e.g. music, walking or dancing). To be clear, I am referring to instances when a style of cognitive processing (i.e. a culture) is spoken about by terms that could be mistaken to refer to a person’s appearance. On the other hand, this will involve mapping out the cognitive relations of different systems of embodiment with an awareness that different systems associate different metaphors and concepts with the same perceptual stimuli. Fortunately, much of this work has already been performed by anthropologists and linguists. In the following chapters I will discuss some of these findings and explore how cognitive identities can be confused for bodily or racial essences.

I defend the view that language is a form of genetic inheritance that shapes perceptions and agency. I do not think memes exist, but that does not affect my argument. As we will see, I consider it likely that Stevie Ray Vaughan was ‘black’ in quantifiable cognitive ways (especially if we apply the one-drop-rule to the mind). Given that a person who only has a single black ancestor can be considered black by the standards of the ‘one-drop-rule’, a person who has any black perceptual tendencies can be considered black in a psychological sense. This only requires for there to be some cognitive pattern

or tendency picked out by the term ‘black-ness’. Even without the flawed ‘one-drop-rule’ we might still find more nuanced ways of grouping persons based on psychological tendencies. In chapter five I give a lengthy account of what is likely meant by ‘black-ness’ in terms of the mind. This will be compatible with rejecting the hypothesis that the color of a person’s skin is a part of their mind in a way that is not mediated by social factors. This would involve a person’s morphology in their thought processes in ways that are unaffected by culture or development. We have considered one strong reason for rejecting this view in the previous discussion of the fact that the extent of an agent’s embodiment is not determined at birth. Recall that embodiment is constantly negotiated between body, environment and agent. As with Beethoven, agents can learn new ways to perform tasks that differ in bodily recruitment. An agent’s embodiment is not completely determined by its body either. There is a developmental fluidity as the result of mediation from self-representation.

Chapter 3 Stories, Songs and Identities

Over the past four decades, for better or worse, narratives have been recognized by philosophers and psychologists as the dominant framework for various matters of philosophical analysis connected to the constitution, expression and nature of the self. Even neuroscientists who hate it confess it is inextricable from human life. This position is captured in the passage from *After Virtue* wherein Alasdair MacIntyre writes that “All attempts to elucidate the notion of personal identity independently of and in isolation from the notions of narrative [are] bound to fail. As all such attempts have.” This is far from meaning that everyone thinks it is good and ideal that narratives are as central to matters of human psychology, politics and morality as they are, still there is agreement that stories are incontrovertible as a means for understanding personal identity. To see why this is a complex situation, it is helpful to think of identities not only as collective groupings, but also as ‘roles’ or ‘types’ to be fulfilled by agents. An identity is simultaneously revealing about individuals and the societies in which those individuals occur. In other words, to inhabit an identity involves picking a character from a culture’s warehouse—whenever anyone does this, we can learn facts about individuals as we simultaneously also glean facts about the available selection. In *The Ethics of Identity*, Kwame Appiah explains how narratives are provided for individuals by their societies

In constructing an identity, one draws, among other things, on the kinds of person available in one’s society... there are ideas around [of ways for one to behave]... These notions provide loose norms or models, which play a role in shaping our plans of life. Collective identities, in short, provide what we might call scripts:

narratives that people can use in shaping their projects and in telling their life stories. (Appiah 2005, page 23)

This point is also made by MacIntyre, who argues in *After Virtue* that the options for selves are given by the available character roles that a culture has to offer. So while the choice of which option is the best fit for oneself can be an act of self-expression, the options that are themselves prior to the individual expresses the culture at large. In this manner, MacIntyre argues that the available 'characters' exemplify the differences between one culture and another

What is specific to each culture is in large and central part what is specific to its stock of characters... [Characters] are, so to speak, the moral representatives of their culture and they are so because of the way in which moral and metaphysical ideas and theories assume through them an embodied existence in the social world. Characters are the masks worn by moral philosophies. (MacIntyre 2013 edition by Bloomsbury, pages 32-33)

Similar accounts have been made about the relationship between culture and self-expression in other norm-regulated domains. Recently, there have been many interesting developments in the neuroscience of music and gesture, with potential to reveal much about identity in the realms of auditory and somatic cognition. What is striking here is that both of these offer chances to look at identity in contexts that are empirical and distinct from language. This is also fascinating because it suggests that the verbal act of expressing one's narrative shares deep-seated similarities to the nonverbal activities that we tend to place less reflective weight upon. In recent years, cognitive psychologists have made 3 interrelated claims about how culture organizes musical behavior:

Performative Norms: Most original musical activity occurs within learned normative schema.

Interpretive Norms: Human musical perception occurs within internalized auditory schema.

Identity Norms: Individual musicians fulfill character roles given by the cultural economy.

A scientist who has written extensively on this subject, Anthony Kemp writes of Western music

The composer is often viewed as the musician par excellence... These kinds of attitudes towards composers are predominant in Western culture, but in cultures where less emphasis is perhaps placed upon the new and the innovative, the notion of the composer as a specialist who drives the 'world of music' does not occur. (Kemp 1996, page 194)

Wittgenstein eloquently captures this point about music and culture when he argues the following in *Remarks on the Philosophy of Psychology*

The names of famous poets and composers seem to have taken up a peculiar meaning into themselves. So that one can say: the names "Beethoven" and "Mozart" don't merely sound different; no, they are also accompanied by a different character. (Wittgenstein 1990, aphorism 243)

On the one hand, it is not obvious how self-expression is related to non-verbal music. On the other hand, given that different cultural traditions seem universally accompanied by their own musical traditions it seems plausible that the link between the two is not less significant than much-discussed linkages between a culture and its language. Still, it seems that we are taking a drastic leap when studying identity at the level of nonverbal cognition instead of stories.

First, allow me to introduce the main idea with a simple claim and a few considerations in its favor: in principle, if the entire web of one's implicit interpretive standards and norms can be accepted as widely reflective of a concurrent self-concept,

then, in principle, some more narrow region of that web of implicit interpretive standards and norms that is reserved for a particular practice will also be acceptable as reflective of a nontrivial segment of one's actual identity. If so, it would no longer seem extravagant to suppose that the very fact that some nonlinguistic artifacts of the mind (e.g. songs) contain the outward structure of a conventional, linguistic narrative is neither dismissible as coincidence, nor as the merely trivial mimicry of a narrative pattern—hence, there is no a priori reason that it (a song) cannot be substantively self-narrative, supposing only that one knows what is being heard or intends what is being performed. Indeed, the fact that one only sees or hears a pattern does not mean that there is not any inherent psychological meaning to it; after all, why should such meanings need to be put there consciously or even to be made conscious in order to have various communicative, instigative and signaling effects? To make sense of my general claim it will be helpful to focus on the higher-order symmetry that emerges in the relationship between the following:

- (1a) the implicit auditory schema
- (1b) the explicit auditory consequences of those schemas (i.e. the songs)
- and
- (2a) the implicit self-narrative
- (2b) the explicit representational consequences of those narratives (i.e. the stories)

An important detail of my analysis is that (1a) and (2a) are only differentiated when one adopts a conception that prioritizes some particular form of explicit manifestation (songs or stories) above the other, although the psychological principles responsible for both are continuous elements of the same individual psychological unity (self).

This is to say that the structure of a sonata is the explicit manifestation of a shared implicit schema, in the same way that a tragic tale is the explicit manifestation of a certain society's implicit norms for story-telling. In either case, what is implicit acts as the lens for the subject to understand his surroundings, what is subsequently made explicit is a reflection of how the subject understands, identifies and reacts in the context of those norms: in essence, who one is. This broad view about the continuity of one's implicit self is consistent with what philosophers like Paul Ricoeur, Charles Taylor (1985) and Marya Schectman (1996) have argued about the implicit self-narrative in regard to how it stands apart from the particularities that it arranges. Hence, there seems to be no reason to isolate one's implicit auditory schema away from the rest of one's general implicit schema or to treat the linguistic manifestations of implicit self-narrative as more fundamental than its other manifestations.

I am suggesting that the underlying psychological organization that is active in a self-narrative is one and the same with those implicit organizing principles that use memories, tastes and predictions to frame a person's subjective auditory experience—one's schema/ear. In principle, it is not at all obvious that units of musical information could not (or do not) already encode information that is about the same events or states that one ordinarily refers to by means of verbal language. On the contrary, I will actually be defending a view that accuses the demarcation between music and language of being arbitrary, although this will not be essential to my thesis. But, before going any further to explain the sense in which one's auditory schema/ear is continuous with his implicit self-conception, it will be important to first understand this distinction between the story that

one tells about himself and the information that one's storytelling expresses about him. That is, between the explicit narrative that is told and the implicit narrative that any explicit telling must adhere to; in one sense, this amounts to the practical claim that the way in which a story is told can convey information that is, so to speak, separate from the story itself and in another sense, this amounts to the substantial claim that there is an implicit ideal that the story aims to convey. Taylor for example argues that the explicit articulations are dependent on this implicit 'object'—a characterization that reveals that his view is also holistic.

On the one hand, there are unconscious influences on how the story is told which suggest how the narrator conceives of himself, but the story itself can never do this exhaustively. Much of what is in need of expression is also involved in the process of finding expression. It is this line of reasoning that has lead philosophers like Charles Taylor, Paul Ricoeur and Marya Schectman to the following conclusions

- i. The narrative-self is defined, mutually, by its implicit and explicit narrative elements.
- ii. The implicit narrative is a dynamic, implicit mode of schematizing.
- iii. The implicit narrative-self is a dynamic, implicit mode of self-schematizing.

On the other hand, these unconscious influences are also expressed when we tell stories about others. In this way, one might say that all stories we tell are self-expressive, even if they are not about ourselves. Relatedly, the claim that I am raising about continuity between narration and senses like audition is supported by the fact that accounts of implicit self-conception overlap with accounts given by psychologists like David Huron (2006), Daniel Levitin and Oliver Sacks about our implicit schemas for sense perception,

focusing particularly on hearing. For example, Schectman's account of how persons self-conceive via implicit narratives holds that a person's memories, plans and reflections about themselves are filtered through an unarticulated set of interpretive norms (a schema if you will) that has been internalized, but is still never set in stone. Regardless of the particular way that one's implicit self is configured in terms of the cultural norms and narrative principles that it incorporates, an implicit sense of narrative meaning is required because it gives a person's experiences a unity—it organizes experiences around a subject—a fictional self to experiences the experiences and thinks the thoughts. In both contexts (i.e. narratives and auditory schemas) the norms one internalizes through their upbringing go to work as the preconscious filters of their respective domains. They create the possibility of meaning, order and orientation within otherwise indeterminate streams of data. In at least one sense of speaking of the relationship between physical and psychological events, sound-waves must be perceived as musical in order to be realized as musical events. Similarly, historical events must be perceived as stories for stories to exist. These both require committing to specific interpretive norms and forgoing others, since both musical and literary genres are partly defined by mutual boundaries and incompatibilities with one another.

In other words, the implicit narrative and implicit auditory schema satisfy the same function of adding intelligibility to their domains. It is also not a trivial detail that they are both 'implicit' sets of norms. This aspect reveals the important fact that neither is capable of being fully articulated in principle, without thereby needing to adjust their content in response to themselves. That is to say that both are continually developing as

the interpretative contributions that screen all of a subject's possible experiences, thereby giving those experiences a sense of order and subjective orientation. Just to be clear, I am saying that your 'listening ear' as a Western subject living in 2019 (when listening to music) is distinct from all of the Western 'listening ears' that existed in 1619—I am also suggesting that your 'storytelling norms' as a Western subject living in 2019 (when thinking about your life) are distinct from the Western 'storytelling norms' that existed in 1619. I take it that both of these points are uncontroversial in themselves. The only step that I would add is that the primary reason why these schematic filters resemble each other is that they both belong to a shared broader set of preconscious, implicit norms that we might as well call the implicit self. Why this occurs is also interesting. Huron (2006) argues that our brains must constantly reevaluate their expectational frameworks for mapping auditory events, because the decision of what representation to give a new input always matters for our survival as organisms. So it is a secondary feature on his view that these same cognitive processes are exercised by music listening. For any given auditory stimulus, the listening brain generates and tracks predictions using many incompatible representations, but predictions that arise from different representations are not weighed equally. Each listener has a unique listening history in which some representations have proven more successful than others. Similarly, the expectations that guide a subject's orientation through new situations depend on prior experiences.

The next point is simple but important. Given that philosophers like Schectman address the implicit self as singular and unified, it seems appropriate to assume that the purview of the implicit self should span the entirety of one's implicit psychological life;

therefore whatever is responsible for generating a subject's unique auditory representations is a part of their implicit self-conception in the same way that what is responsible for the subject's unique narrative representations is included.

Many composers conceive of their drive to compose music in epistemic terms that are reserved by philosophers for narrative conceptions of the self (e.g. 'self-discovery', 'self-knowledge' and 'self-expression'). The composer Aaron Copland writes:

[W]hy is it so important to my own psyche that I compose music?...the need to create—the answer is always the same—self-expression; the basic need to make evident one's deepest feelings about life... each [work] brings with it an element of self-discovery. I must create to know myself, and since self-knowledge is a never-ending search, each new work is only a part-answer to the question 'Who am I?' (Copland 1980, page 41)

Similarly, composer Michal Tippett explains:

I feel the need to give an image to an ineffable experience of my inner life. I feel the inner life as something that is essentially fluid in consistency. (Clark 2001, page 17)

There are at least two similarities in the development of a personal schema for self-conceiving and expressing in both musical exposition and verbal narratives. On one hand, both involve interpretive modes that one inherits and then participates in by internalizing and applying norms to new contexts. On the other hand, both systems appear to evolve over time through the accumulation of differences over several generations.

David Huron (2006) suggests that we humans are able to experience music as meaningful as the result of our brain's capacity to invent and apply its own auditory generalizations. How a brain makes associations or generates predictions about auditory

events is related to how it processes verbal information, despite differences in the content experienced. Daniel Levitin adds:

The appreciation we have for music is intimately related to our ability to learn the underlying structure of music we like—the equivalent to grammar in spoken or signed languages—and to be able to make predictions about what will come next. (Levitin 2006, page 109)

This lends credibility to the thought that abstract mental representations of auditory situations (as song) overlap the abstract representations of verbal situations (as story) in ways that are not obvious at the level of experience.

Auditory generalizations are reminiscent of the learned categories characteristic of semantic memory... Like semantic categories, schemas are generalizations formed by encountering many exemplars. (Huron 2006, page 225)

Huron (2006) gives the example of an “apple” as an object we learn to recognize by inferences on the basis of previous encounters with apples. Likewise, music that we hear is broken down by the brain into generalized patterns that help us to predict, and thereby to perceive without expending as much cognitive effort. We store these generalizations as implicit schemas that help us to render new musical patterns intelligible as sorts of musical events. This is why two friends from the same background might generate different intuitive reactions and expectations about which sorts of events and sounds fit into certain groupings (e.g. songs, styles, genres, etc.) and which do not fit.

For instance, when one expects to hear a particular musical form, genre or style, the brain does not simply ‘listen to’ the music, rather it will ‘listen for’ the occurrence of certain recognizable patterns. Despite differences in the ways that we give explicit characterizations or categorizations of the contents of either practice—as far as the

relevant logical operations are of concern to the brain, how one decodes music is astoundingly close to how one decodes language. Similarly, if one expects to hear some other generalizable auditory content—her attention will be directed to favor information that fits the expected stimulus, just as one expects to hear a sentence resolved on a note that in keeping with the conventions surrounding its function (e.g. a polite question should raise in pitch, but not in volume).

In both verbal and musical expression, a major determinant of the evaluative valence that is felt in reaction to a stimulus is the extent to which one's expectations are violated or satisfied. The expectations themselves are not fixed ideals; rather they are dynamic, probability models, which again demonstrates the symmetry between how the auditory subject imputes a semantic significance to musical units and events and how a linguistic subject imputes a semantic significance onto verbal utterances and exchanges. At either end of this comparison, the violation of an implicit expectation is experienced as a negatively valenced emotion whereas the satisfaction of one's schematic expectations arouses a positively valenced emotional response. Huron (2006) continues, giving the further example of a chair:

Our most established schemas reflect the most commonly experienced patterns. Schemas exist to help us deal with situations that are novel yet also broadly familiar. For example, we might recognize some object as a chair, even though we have never seen this particular type of chair before. Schemas allow the brain to process information and respond more quickly. In music, schemas represent common enculturated aspects of musical organization. (Huron 2006, page 225)

Huron (2006) adds that a further reason why music has strong emotional meanings for our species is instinctive: audition is wired to trigger automatic physiological responses in

our species. This means that the mere designation of a certain phenomena as ‘art’ does not change how our various bodily systems have evolved to react in the presence of certain auditory triggers. He prompts us to consider as example, the fact that even if we know in advance that a door is about to slam shut, it is hard to will oneself out of being startled by its slamming. From a Darwinian standpoint, Huron (2006) concludes that it is better (in terms of selective fitness) for an organism to overreact to many false alarms than it is for it to miss responding to a single credible threat and that it is in this way that many of our implicit responses related to music are instinctively determined—much like our response to the door. David Huron (2006) writes

We know the door poses no danger to us, but the sound of the slamming door provokes a powerful bodily response anyway... nature’s tendency to overreact provides a golden opportunity for musicians. Composers can fashion passages that manage to provoke remarkably strong emotions using the most innocuous stimuli imaginable... music-lovers know, simple sequences of sounds hold an enormous potential to shape feelings. (Huron 2006, page 6)

What is important about this passage is Huron’s point that innocuous stimuli can arouse strong responses in members of our species. His explanation is that not every adaptation needs to be fool-proof; in terms of survival, the occasional exaggerations and false-responses will be preferable to a single instance of unresponsiveness in the face of danger. So generally, when forming a schema that is to be relied on for surviving in an unforgiving environment (certainly in one that is as harsh and brutish as our recent ancestors faced) it is necessary, indeed better to be sensitive to the various nuances of stimuli—which, in turn, also provides an explanation for why we all have such strong, implicit judgments about what music ‘fits together’: we all know what it is like to believe

that a work belongs to a certain category or genre, even if we cannot give any articulate support for these somewhat intense intuitions. Similarly, we all know how it feels to anticipate an upcoming event in a song even without having heard it before. So there is clearly an implicit sense in which most listeners are aware of their own expectations and surprisingly sensitive to their own feelings of disappointment when music does not satisfy their preferences. In comparison to language, it seems that the implicit musical self is in some ways a more prominent and universal feature of daily psychological life. Consider that it is possible for someone who is not a musician and lacking any technical ability (for contributing or participating musically) to talk for hours about their preferences and standards for music, but it does not seem possible that someone lacking linguistic competency could express their implicit narrative identity. Then again, it is my view that they could express it musically. But this would require accepting that music is not inferior to language as a medium for narrative identity.

The implicit schema that a listener uses to interpret music is designated by the sensory metaphors of one's musical-taste (often to highlight preference) or one's musical-ear (often to emphasize perception) although, in practice, both aspects are variously intertwined. We have seen that correctly expecting that an auditory stimulus will occur is rewarded with a positively valenced emotional response, whereas the violation of expectations is experienced with a negatively valenced emotional response; the concept of an auditory schema reveals that perception and preference share a common perimeter, the schema that one uses is his framework for representing and evaluating what one hears because there is also a direct relationship between how accurately a stimulus is predicted

and how accurately it is perceived. Therefore, it also follows that since our experience of musical satisfaction is the currency through which human expectations are either rewarded or challenged by composers—what one hears from a composer’s music is also a reflection of both the schema one is using and of the self who is partially constituted by that psychological schema.

Like an implicit narrative, it seems that any listening schema will, in principle, also be articulatable as a formal paradigm that is comprised by a systematic network of assumptions, norms and misgivings; in short, a listening schema will be a set of compositional expectations that can either be procedurally followed or internalized. Yet, while this is always possible, the other side of the coin is that the logic of one’s interpretative schema does not need to be made explicit by the subject or consciously aware to the subject in order to be constitutive of how he conceives of music. No doubt, a person’s auditory schema is a combination of hardwired instincts and unconsciously learned inference models for auditory representations. Given that these models for auditory representations are the lens through which one self-represents, evaluates and understands musical events it would seem uncontroversial to say that one’s implicit psychological schema ought to be considered a self-constitutive element of his psychological life. I take it that this is correct for the same reasons that Schectman argues that one’s self-conception is a lens for filtering our understanding of the world that implicitly reflects how we conceive ourselves to be. Schectman writes

The sense of one’s life as unfolding according to the logic of a narrative is not just an idea we have, it is an organizing principle of our lives. It is the lens through

which we filter our experience and plans for actions, not a way we think about ourselves in reflective hours. How we appropriate actions and experiences to make them part of our consciousness is thus more like how we appropriate books to make them part of our library. (Schectman 1996, page 113)

Additionally, as with a self-narrative, a piece of music only receives its full intelligibility from a wider societal context, which is to say that music is similarly constrained by the criterion of interpersonal intelligibility. This is to say that it follows that one's musical behavior is only fully intelligible insofar as it is not appraised in isolation from the community of schemas that will be used by its listeners. Huron articulates this point when he writes the following about the demands of participating within a given musical schema

The origin of existing schemas is of little concern when creating a musical work. What matters is simply that the members of one's intended audience already hold a particular expectational schema. (Huron 2006, page 242)

Huron's point is that the role of convention should not be overlooked so as to explain a work of music from a detached perspective; the fact that music has the significance that it does for our species is the outcome of our ability to internalize the patterns that we hear and to integrate them into our subsequent interpretations of the world around us—so, merely analyzing the properties of sound waves or a song's structural patterns in isolation will not reveal the importance that it has for its community

What makes the slendro scale important is not that it is derived from some “natural” acoustic foundation ...What makes it important is that many Balinese listeners are familiar with it. Similarly, the primary importance of the major scale is its familiarity for a large group of [Western] listeners, not that it exhibits some distinctive acoustic or formal properties. (Huron 2006, page 242)

In his book *Style and Idea* (1975), composer Arnold Schoenberg argues for a related point as part of a critique of the Western musical schema. He claims that there is no natural

justification for limiting music by the specific norm of tonality as most Western music had been since the 1600s. Tonality is the perceived structural relationship between notes that involves a particular note as the tonal center or ‘tonic’, like the note C in the key of C major. The tonal ear expects that melodies should follow certain rules in relation to the tonic and resolve themselves in a way that agrees with the tonic. Schoenberg compares the assumption that tonality is of natural worth to fallaciously reasoning that anything follows normatively from the fact that earth’s gravity naturally pulls objects downward. In other words, just because there is a sense in which one can codify (and thereby begin to experience) a certain mathematical relationship as the pleasant fulfillment of expectations does not mean that those expectations are inherently better than others that a society might decide to codify; that is, the adoption of tonality might have been an excellent development—but it was not a moral discovery or physical accomplishment:

There is no reason in physics or aesthetics that could force a musician to use tonality in order to represent his idea. The only question is whether one can attain formal unity and self-sufficiency without using tonality. The appeal to its origin in nature can be refuted... just as tones pull towards triads, and triads towards tonality, gravity pulls us down toward the earth; yet an airplane carries us up away. (Schoenberg 1975, page 262)

Thus, if Huron and Schoenberg are correct, the fact that the Western ear has over the centuries become acclimatized to certain tonal relations is the result of the auditory norms of that society being continuously impressed upon the minds of its members (recall point A. from the introduction). According to Schoenberg’s own thesis, there is a steady historical progression according to which harmonic intervals gradually come to be normatively ‘emancipated’. He argues that over time, as the collective Western ear

becomes familiarized with the sounds of various dissonant intervals, their respective normative valences would naturally become less objectionable and while there are no natural limits to what is musically possible at any time, there are temporally bound cultural limits on the schemas that people of any time will be able to embrace. Schoenberg considers it to be his personal obligation as a composer to liberate dissonant intervals so that future listeners will appreciate the full, natural spectrum of musical possibility:

‘The emancipation of dissonance.’ That is to say, it came to be placed on an equal footing with the sounds regarded as consonances... For a long time to come, the listener’s ear must still be prepared before he finds dissonant sounds a matter of course and can comprehend the processes based on them. It seems to me that such composers’ activity is very much the thing to ameliorate this. The idea is timeless, so it can perfectly well wait; but the language must make haste! (Schoenberg 1975, page 264)

Atonal music and the intervals involved in it provide a clear case where norms are historically advanced within a society’s musical schema (recall point B. from the introduction); to be sure, it is unlikely that the continuity between the evolution of musical norms and narrative norms could be more apparent than in the case of dissonant intervals—for reference, less than two centuries prior, one such dissonant interval known as the ‘tritone’ had been given the title ‘diabolus in musica’ (the Devil in music). Nevertheless, Schoenberg’s goal was to acclimate us to what had previously been regarded as dissonant/satanic/upsetting so that it could be integrated into our broader musical vocabulary—possibly even being transformed into what is consonant/good/pleasing. Earlier, I mentioned that some philosophers argue for both A. and B. in regard

to how the options for the types of selves that one can legitimately select are selected at a time or evolved over time. For instance, Appiah, Flanagan, MacIntyre and Rorty argue that intellectual cultures vary diachronically in the options and constraints that they impose on the performance of personhood by identifying certain episodes in the Western narrative canon to show that a life's options are always constrained by the inventory of its times. On one hand, and as with musical schemas, the available norms, genres and configurations of personhood are in dynamic flux. On the other hand, the reason for change remains simple: natural selection operates on both linguistic and auditory representations (both within individuals and groups).

According to narrative analysis, the sorts of selves that one can legitimately perform depend on the options that are made available during that stage of the Western narrative canon. For instance, Flanagan argues that the options provided by the canon in the lifetime of John Locke were very different from what it made available during the lifetime of Nietzsche, especially insofar as the former selves were forced to define themselves in relationship to a theistic normative-cosmology. Evidently, there is a worthy comparison to be made between this idea of selecting one's narrative scheme and 'genre of life' from a cultural stockpile of available narrative forms and the ways that musical schemas provide genre standards, normative and performative constraints. Once we compare these schemas, it becomes clear that there are also historical similarities between the leap from Theism to Atheism and from Tonality to Atonality; the 'emancipation of dissonance' meant that there were new, previously untenable options for music that did not reference an objective 'tonal center', just as atheism widened the normative options

for arranging a life in ways that were not centered on religious teleology. For a more specific example in music one need only to turn to the life of any historical composer to see how auditory schemas are influenced by the same worldly factors that mold narrative schemas.

Against the counterargument that music is only trivially narrative. It may be argued that what is ‘narrative’ about a fugue or sonata form is just that certain patterns occur (hence it is trivial), but what is ‘narrative’ about my story is, in part, that it is characteristic of a temporally extended subject which is prior to the particularities of any given experience (hence it is self-constitutive). At this point, I think a sufficient counterargument is to note that, just as an implicit schema temporally situates the narrative subject at a perspective that is sandwiched between the subject’s forward looking anticipations about the future and rearward looking memories of the past, so too does the implicit auditory schema situate the listening subject—so long as the sounds are perceived as music or as intelligible situations. In the latter case, it is the success or failure of implicit probability judgments that determine how a listener represents and rates music, which means that the listening subject is also prior to the particularities of any given experience. So, it is false to suggest that what is ‘narrative’ about a fugue or sonata is only the occurrent pattern—what is heard in music is inseparable from the fact that it is heard as music. Conversely, that sounds are heard as music at all implies the existence of the listening subject to perceive that higher-order, ‘musical’ significance. That is to say that the musical object: (1) supervenes on the notes themselves and (2) is preceded by the existence of that listener. For instance, when one is improvising on an

instrument the present moment of attention is situated by a self-reflexive awareness of its own remembered past and intended future—one that is exactly like how a verbal narrative (whether broadcasted interpersonally or contained as an ‘inner monologue’) situates the perspective of a narrator. Therefore, the claim that the narrative self is prior to the particularities of any given experience (and hence, that it is self-constitutive) must also be true of the improvising musician; despite the nonverbal nature of its thoughts, musical improvisation is very much like engaging in a reflective monologue with oneself (or a philosophical dialectic). At minimum, a musical improviser must

- (1*) Decide what shall appropriately come next (i.e., ‘what shall I convey?’)
- (2*) Act upon the decision
- (3*) Appraise the execution for success or failure while it is happening
- (4*) decide on the basis of (3*), how to repeat (1*)

Indeed, when one is focused on hearing or improvising music, it is necessary to orient one’s actions or observations according to the relative developments of the music—by the time that is heard inside the music. This point reveals a further sense in which musical and linguistic narratives are similar—both are temporally perspectival phenomena.

It may be argued that the latter failure (b) is evident in that what is ‘narrative’ about musical forms falls short of what is ‘self-expressive’ about a life-story, insofar as it cannot articulate details about an individual self. This objector may concede that it is possible for a song to encode a certain kind of pattern that has symbolic significance when it is recognized or decoded, but deny that this ever amounts to more than a ‘musical speech act’ and as such ceases to be solely musical before becoming narrative.

Alternatively, this objector might embrace a weaker version of my earlier point that music (e.g. an improvised song) might express certain first-personal subjective choices and decisions, without articulating details that are in any way characteristic about that individual self.

After all, if a song is a kind of non-representational artifact, then it cannot be taken seriously as a cognitive state (i.e. a self-representation) or psychological profile (i.e. a self-expression). The objector might be content with saying that music ‘mimics the pattern’ of an actual narrative, while denying that it accomplishes anything more. On this view, a sonata fails to represent anything determinately and lacks descriptive content—implicit or explicit—whereas a standard story attains both ends. Moreover, one could press my account with the following question:

What does it even mean to claim that music’s being structurally narrative is indicative of its also being narrative in any substantive, psychological sense?

The strongest case to be made for the claim that music is substantively narrative will be to align musical activity with what Schectman describes as the logic of an ‘implicit narrative’—“the psychological organization from which [one’s] experience and actions are actually flowing”—the dynamic set of principles for integrating and interpreting the items of a mental life into a unitary whole with a subject at the center, projected into its past and future by its memories and expectations, respectively. There is a general consensus, held by philosophers and psychologists, that certain conceptual requirements must be met for a sequence of mental states to qualify as ‘narrative’ in any sense that would be meaningful within a human mental life. Some of these might be suggested as

sufficient prima facie reasons for doubting the existence of nonlinguistic narratives; for instance, the common requirement for narratives to have a definite and essential compositional structure means that narratives must be more than mere listings and ordered collections of events—prompting the question of whether it is language that makes the important difference. For example, Paul Ricoeur thought of language and temporal arrangement as partners, mutually essential to the constitution of narrativity. In

On Narrative Ricoeur writes

I take temporality to be that structure of existence that reaches language in narrativity and narrativity to be the language structure that has temporality as its ultimate referent. Their relationship is therefore reciprocal. (Ricoeur in McQuillan 2000, page 256)

An additional concern is that in order for a sequence or list to narrate, it must have intentionality and yield an intelligible interpretation and, as such, one can doubt whether or not this is possible without language; this will seem especially doubtful if things like ‘meaning’, ‘representational content’ or ‘reference’ are not thought to be possible without language. In standard literary cases, the requirements of compositionality and intelligibility are concurrent with having a representation that is linguistic—yet, it is far from obvious that linguistic availability is necessary for a narrative to be experienced, thought or expressed. This assumption feeds the widespread thought that stories are not only the paradigmatic, but also the essential, mode of expressing the happenings and character of a life. Nevertheless, it may be the case that compositionality and intelligibility are equally manifest in nonlinguistic forms of narratives and that these are, if anything, far from being trivially narrative (as they are often dismissed as being). In

order for this to be the case, it must be true that, like the content of a verbal statement, nonlinguistic mental representations can depict the facts about the happenings and character of a life. As such, I shall argue that neither core structural requirement of narrative mental states requires language.

Compositionality requires that narratives ‘fit together’ in ways that are of holistic consequence for all of the related parts, whereas intelligibility requires that a realized narrative confers additional significance onto its components that is greater than the sum significance of any of its individual parts. Jointly held, these criteria specify that the overall narrative as a whole must have an internal arrangement that constructs a meaning greater than its parts and every part of a sequence of temporally related states that comprises a narrative must receive the significance, so to speak, of being defined in relation to the rest of the narrative. Conversely, if additional meaning-relationships do not manifest for the particular states that comprise the pieces of an ongoing sequential chain the overall sequence has failed to be transformed in the way that would have made those thought-stages of a narrative (as oppose to merely sequentialized events). To clarify, this is all to say that in the case of a mere sequence, the significance of the particular moments occurring in the chain of thoughts/acts between times T_1, \dots, T_5 would be identical to the sum of those individual states occurring independently of each other or arbitrarily grouped together without any essential, unifying order. These requirements are given by most philosophers in order to say that a narrative must exhibit an overarching significance (like an autobiography) and not be arbitrarily strung together (like a grocery list). Perhaps the earliest articulation of the composition criterion is found in Aristotle’s

thought, particularly when it is argued in *The Poetics* for distinguishing between the unity had by coherent narrative plots (mythos) that give coherence to the presented events from the merely episodic plots that lack any unifying necessity between sequences of events

By the ‘story’ I mean the plot of events... Story, then, is the starting point, the soul as it were, of tragedy... Now, a whole is that which has a beginning, a middle, and an end. A beginning is that which does not necessarily follow something else, but after which something else naturally is or follows. An end is the opposite; it naturally follows something else, either necessarily or for the most part, and has nothing after it. A middle both follows something else and has something else following it. (Kenny 2013, page 25-26)

Originating from this Aristotelian notion of ‘plot’, the term ‘emplotment’ is widely used to designate the process by which pieces are arranged into the beginnings, middles, and ends of a plot structure. Literary critic Hayden White (1978) described how emplotment takes place in the construction of historical narratives:

Histories gain part of their explanatory effect by their success in making stories out of mere chronicles; and stories in turn are made out of chronicles by an operation which I have elsewhere called “emplotment.” And by emplotment I mean simply the encodation of the facts contained in the chronicle as components of specific kinds of plot structures. (White 1978, page 83)

In *Time and Narrative* Paul Ricoeur gives an analysis of White’s account of emplotment—he has the following to say about the compositional quality that is separate from the component features of a narrative:

Emplotment conserves an explanatory level distinct from that of the story, in the sense that it does not explain the events of the story but rather... [identifies] the class to which it belongs. The story-line allows us to identify a unique configuration, while emplotment invites us to recognize a traditional class of configurations. These plot categories, as a function of which the story itself, not its events, is encoded, are akin to those ‘relational cryptograms’ that according to E. H. Gombrich, in *Art and Illusion*, govern our way of ‘reading a painting.’ (Ricoeur 1990, page 164)

Note that according to these criteria from Aristotle, White and Ricoeur, what a good narrative arrangement (namely a ‘well-composed plot’, ‘structural encoding of chronicled facts into plot’ and ‘logical internal connection of events’) entails is structural in kind and is not logically restricted to literature or theatre. Evidently, plot ought to be considered unrestricted with respect to representational modality. Rather, what is essential here is structurally determined—as characterized by relations of temporal order and logical dependency. So as to make this point clearer, let us take the following passage from Aristotle as a more precise statement of his version of the criterion of narrative compositionality:

Actually seeing a play performed may evoke fear and pity, but so too can the plot itself—this is more fundamental and the mark of a better poet. The story should be put together in such a way that even without seeing the play a person hearing the series of events should feel dread and pity. (Kenny 2013, page 33)

There is a sense in which it could be easily advanced that other forms of mimesis, like instrumental music, art and dance, satisfy the particular criteria of narrative given here by Aristotle—perhaps, especially insofar as these forms can also demonstrate other narrative elements like temporality, theme and perspective. For instance, much music in the time of Ancient Greece was already ‘well-composed’ in that it passes Aristotle’s criterion of having its particular beginning/middle/end essentially in the precise order that they are placed; for a more recent example, Sonata Form has been standardized since the 18th century to refer to a sequence that is structurally isomorphic with the Aristotelian plot: like a story, it starts with an exposition (beginning) where the theme is established, the

tonic key is given and followed by a modulation to the dominant key, next the development (middle) occurs where the theme is modified and restated differently and finally the recapitulation (end) where the initial theme and tonic key from the exposition are again given to resolve the journey. These reasons are also why it is widely accepted by musicologists that much Western instrumental music has for a long time been narrative. A good example of this is film scoring.

A second requirement that is commonly stipulated by philosophers is that in order for one's life (or any segment therein) to be narrative, each segment of the life must connect with the maximally inclusive story of one's life for its intelligibility. That is to say, if any segment could be fully intelligible in isolation from the rest of the life story, either it is not an intelligible part of that narrative life, or neither it nor the life are narrative. The intelligibility/coherence/unity requirement for narrativity is given a significance for the ontology of persons by philosophers such as Schectman, who argues in *The Constitution of Selves* that:

To say that a person's life is narrative in character, then, is at least in part to claim that no time-slice (if you will) is fully intelligible—or even definable—outside the context of the life in which it occurs. (Schectman 1996, page 97)

This reveals that for Schectman there is a requirement that every segment of a narrative shares in bearing the weight of the whole—the holistic sense of how all the rest of it meaningfully 'hangs together'. This is a point that is given expression in multiple forms. For instance, this requirement of narrative intelligibility/coherence/unity within a life also

appears in areas of the literature focused on the ethical and social aspects of self-narratives, as Kwame Appiah argues:

One thing that matters to people across many societies is a certain narrative unity, the ability to tell a story of one's life that hangs together. (Appiah 2005, page 23)

Similar concerns are raised in *After Virtue*, when MacIntyre argues that having a sense of narrative unity is the 'only criteria for success or failure in a human life as a whole'. An important extension of this criterion that many philosophers also take to be central holds that it is necessary that narratives be interpersonally intelligible. For instance, Schectman writes:

To be identity-defining an individual's self-narrative must conform in certain crucial respects to the narrative others tell of his life. (Schectman 1996, page 95)

Likewise, MacIntyre (2013) argues:

I am part of their story, as they are part of mine. The narrative of any one life is part of an interlocking set of narratives...these are essential constituents of all but the very simplest and barest of narratives. (MacIntyre 2013, page 253)

And to this same point, Appiah writes:

The story—my story—should cohere in the ways appropriate to a person in my society. It need not be the exact same story, from week to week, or year to year, but how it fits into the wider story of various collectivities matters for most of us. (Appiah 2005, page 23)

Similarly, Owen Flanagan (2014) writes that there are expectations for persons to be able to yield an intelligible description of their own narratives:

There are audience pressures to conceive and tell a unified story about oneself despite the disunities. (Flanagan 2014, page 111)

In the literature, the majority of examples and case-studies are like those given by Schectman, MacIntyre and Appiah; predominately historical or literary. Yet, it is not clear that their analyses are limited in any logical sense to the applications they are given—for instance, it seems that the core features of Schectman’s analysis are likewise amenable to musical narratives. Consider, in particular, when she writes that:

Having an autobiographical narrative does not involve actually articulating the story of one’s life to oneself or anyone else, but only organizing experience according to an implicit narrative. (Schectman 1996, page 114)

Here, Schectman’s notion of an implicit narrative denotes a pre-linguistic, psychological inclination that disposes one’s self-conceptions to unfold according to the ‘logic’ of a story and requires something akin to a shifting temporal perspective. In fact, according to this conception from Schectman, it is not only evident that one’s self-narrative does not need to be linguistically available, but that it does not even need to ever become conscious in order to be self-constitutive and a psychologically efficacious part of one’s self-conception:

People actually narrate very little of their lives in any self-conscious way. Instead, they permit a general set of background assumptions about themselves and their lives to guide in the unfolding of experience. Indeed, constraints of time and exigencies of life make it impossible to articulate full life narratives, and so explicitness cannot be a prerequisite for an element’s being part of a person’s self-conception. (Schectman 1996, page 116)

So, as with the previous examination of Aristotelian plot, it is not obviously necessary that this structural quality of narrative is represented in language; I think it is only a contingent matter that serious non-linguistic alternatives have not been developed by these writers. At any rate, her point about intelligibility as a requirement depends on the

logical structure of a prospective narrative. By contrast, some accounts of the intelligibility requirement feature language more centrally—elsewhere in *After Virtue*, MacIntyre argues that the significance of any behavior, if it is to be understood as an intentional human action, requires that it is locatable in the broader collection of stories within which one's life occurs; for our actions and interactions are only intelligible at all because the stories we tell provide settings and contexts for our lives. MacIntyre argues that:

In successfully identifying and understanding what someone else is doing we always move towards placing a particular episode in the context of a set of narrative histories... It is because we all live out narratives in our lives and because we understand our own lives in terms of the narratives that we live out that the form of narrative is appropriate for understanding the actions of others. (MacIntyre 2013, page 245)

For both philosophers, what makes a life narrative has to do with the unity of the intelligible meanings of each component stage/timeslice/episode. The events in a narrative have the particular identity and significance that they do in part because they are the components of that actual narrative. Being a person who has such a narrative means that present states are intelligible by relation to past and future states—the past and future of that narrative. Yet, as with compositionality, intelligibility is structural. This means that intelligibility is separable from any requirement of linguistic thought. For instance, the relationship of intelligibility is necessary for making music musical at all. I will now make this point clearer with some examples.

The enjoyment of a musical experience (as opposed to a mere sound) is characterizable in terms of its own uniquely intelligible significance, much like how a

narrative has its own intelligible significance that distinguishes it from the mere occurrence, telling or chronicling of unrelated events. Much like an ongoing life-narrative, when new musical inputs are heard, their significance is measured in relation to (a) memory of earlier notes in the song and (b) memory of expectations that failed or succeeded to predict the earlier notes in the song. We can capture the dynamic nature of this process over the temporal span of song with the following: the new-past and the new-present are both shaping new expectations. Once a piece has been finished, the memory of its entirety is integrated into the subject's auditory schema. This is why subsequent listenings can never be identical to earlier listenings of the same song. So, it seems that the process will continue for as long as the human subject continues to process auditory events in relation to its own past (which, incidentally, is the same answer that most narrative theorists give about personal identity.) To put the point differently, consider that if you observe any musical note in isolation from the notes that surround it—its significance is completely changed. Every song in the key of C has, more or less, the exact same notes; every song of a particular genre or tradition has, more or less the exact same changes and patterns; nevertheless, each musical note has a distinct intelligible significance because it occurs in a unique relation to every other note ever to occur to that subject's implicit schema. Furthermore, we can also observe that in the opposite direction any collection of notes (e.g. a melody, a theme, a song) will only have the significance that it does as a whole in virtue of: (1) the components that comprise it internally and (2) the other combinations and units that a listening subject can compare it to. Indeed, it is important to realize that melodies supervene on notes, songs supervene on melodies,

genres supervene on songs, etc. as each is a category that arranges a series of objects as its components. In the literature on personal identity, there are no fewer than four options for defining the narrative self in relation to the topic of personal identity:

- (1) The narrative qua linguistic artifact.
- (2) The narrative qua socio-ethical relation.
- (3) The narrative qua subjective schema/orientation.
- (4) The narrative qua mental substrate.

Generally, the pattern is that a philosopher will choose one of the above conceptions and dismiss the others. Note that approaches (1) and (2) share an emphasis on socio-ethical details and that approaches (3) and (4) share an emphasis on internal, psychological or ontological details. You might generalize that the first two definitions are externally fixed and the second two definitions are internally fixed. My view is not that theorists who use one of these strategies are arguing past one another. Even these four paths have been carved differently by different philosophers. But I do think that these distinctions are helpful because they reveal how different aspects of a persons identity might be linked in ways that are profoundly difficult to express.

Suppose that someone considers themselves to belong to a particular identity group. It could be the case that they belong to that group because they share a history with other people (e.g. pre-school classmates). Perhaps that gives them a common story to tell, but they feel no particular connection or genuine memories in common with the other members. In this case it would seem that the narrative identity only involved (1) above. But if they stayed close or felt a kindred bond for one another, perhaps the group

would also involve (2). Maybe if the individual meant that she had memories of the experiences it would involve (3), although (3) is still less dependent on interpersonally accessible factors (e.g. words) than (1) and less dependent on interpersonal relationships than (2). In order to have the sort of relation to the group that is characteristic of (4), one might need to have the sense of being the same agent that was present before. This might involve memories or something less specific, like an intuitive or emotional sense of connection. At any rate, the difference between (3) and (4) bring us to the question of whether narratives are the condition or the consequence of self-conscious experience.²

1. Narrative as the Condition for Self-Experience: Fictional selves create temporally extended experiencing subjects who are both conceptually prior and a necessary condition for subjective self-experience and the stream of consciousness.
2. Narrative as the Consequence of Self-Experience: Fictional selves are only extended within the limits of the self-representations in which they occur and require mental states that are of a higher-order than subjective-awareness and self-experience.

Schechtman argues that self-narrative is necessary for self-experience, favoring option 1 on the grounds that self-narration is causally responsible for creating a ‘temporally extended subject’ who is conceptually prior to the content of various important (person involving) conscious experiences. This does not involve a distinction between the personal and the collective dimensions of identity, so supporting 1 is tied to a conception of narrative selves in the sense of collective identity. Either way, it seems that something like an internalized musical schema could be considered as the condition for experiences

² If you believe that consciousness is essentially a higher-order phenomenon, the answer will be clear: narratives will be one potential expression of self-reflexive or second-order intentional states, but not the only possible expression.

of oneself in the activity of playing music, like improvising with a jazz band. The second interpretation fits better with the idea of the narrative self as an artifact in words or in other products of self-expressive behavior. This would still seem to suggest room for maintaining that the self is implicated in musical and other forms of nonverbal activity.

Chapter 4

Self and Psychological Origins

Usually, the psychological view of personal identity is considered to have started with John Locke's distinction between persons and bodies. Locke defined the person as a conscious subject that is psychological in nature, in contrast to the body which is a material system that is biological in nature. This distinction is rejected by the biological view of personal identity, which considers persons identical to bodies. These two views of what persons are assign different senses of the term 'person', both of which are common today in ordinary speech. This psychological sense of the term picks out the subject of experiences, as opposed to the broader sense that we use to mean an individual human being. This distinction is what permits Locke and subsequent psychological theorists to entertain the idea of two persons switching bodies, whereas biological theorists must dismiss the idea of body-swaps by definition. The psychological view has a complex relationship to the idea of race. On the one hand, given that the view is consistent with persons switching between bodies of different races, psychological persons seem to not have the race of their bodies essentially. As mentioned earlier, it is arguable that the inclusion of racial traits in a narrative makes it essential to psychological identity, insofar as it is treated as such by the narrative. It also seems arguable that the assignment of races to persons directly commits a category mistake. On the other hand, the statement 'X is a black person' can also have interpretations that are psychological. This is to say, that it might attribute psychological traits to persons or explain the psychological traits of persons (e.g. behaviors, preferences, abilities) in terms

of race. For instance, there is a precedent in American culture for thinking about what it means to belong to a racial group in terms of music. It is also widely argued that people can learn about their racial identity by studying music. This suggests that there might be psychological aspects to racial identity, given that instrumental music involves thinking that is non-propositional. For example, the English composer Samuel Coleridge-Taylor wrote nonverbal music as a means of to explore his black identity. Hargreaves, Macdonald and Miell (2017) explain

Though brought up in an entirely white environment, [Samuel] Coleridge-Taylor became deeply involved in issues of music and race from his early twenties... the composer started off white inside...but reconstructed his identity as an adult: that makes him an obvious case study in the role that music can play in the transformation of identity. (Hargreaves, MacDonald and Miell, page 704)

Coleridge-Taylor even explains his musical goal as racial, “what Brahms has done for the Hungarian folk-music, Dvořák for the Bohemian, and Grieg for the Norwegian, I have tried to do for these Negro melodies.” In general, it is also not uncommon for music theorists and historians to group music, dance and language by racial categories. Similarly, Miles Davis (1990) argues that the moral culture of black youths would be improved if they were taught the value of black instrumental music, correcting their sense of identity.

Look at whats happening to our kids, how they have gone so far into drugs... One reason for this, at least among black kids, is that they don't know their heritage... The schools should teach kids about jazz or black music... the music that our black forefathers brought from Africa... as much as European (“classical”) music. (Davis and Troupe 1990, page 405)

Since most philosophers believe that the biological view is false, it might be worthwhile to consider if racial identity can be conceived in a way that is clearly not disposed against the psychological view. For instance, if there is a way of preserving the distinction between persons and bodies so ‘X is a black person’ is not synonymous with ‘X is a black body’. This chapter aims to sort the implications of the theories that I have encountered in multiple areas of philosophy and is concerned with the following questions:

1. Is it plausible that persons have their psychological origins essentially?
2. Is it informative to group persons into psychological populations?

The first section addresses the ways that minds stand in relation to other minds to suggest that origin essentialism might be recast within the psychological view. By combining views of persons that are already prevalent, I suggest a framework for thinking about minds in terms of units that can be combined, transferred and replicated like genes. Although I do not argue that persons have their psychological constitutions essentially, although this is no less tenable than the idea that bodies have their genes essentially. It is plausible that persons have their psychological precursors essentially, just as bodies might have their genetic lineages essentially. Section two builds upon the previous discussion of the mind to consider what it means for music to be black or white in terms of lineage and constitution. It concludes with a discussion of whether it seems informative to group populations by psychological traits. I also discuss whether there is a plausible explanation of what it means to be a black person in psychological terms.

4.1 Genetics in the Head

The term ‘genetic’ comes from the Ancient Greek word ‘g nesis’ for creation or birth. In this basic sense, a thing’s genetics is a matter of the relationship between its content and origins. This means that whether or not a thing has genetic properties is substrate neutral. Daniel Dennett explains “it is a mistake to identify genes with their vehicles in DNA. The idea that evolution is an algorithmic process is the idea that it must have a useful description in substrate-neutral terms.” Any information bearing system with a causal history can be thought of as having genetic properties. The same is true of almost all events and objects. For example, most introductions to logic mention the philosopher’s genetic fallacy in relation to arguments. Pirie (2006) explains

The genetic fallacy has nothing to do with Darwin or Mendel, but [with] not liking where an argument comes from... Every time you dismiss an argument or opinion because you dislike its source, you commit the genetic fallacy...The genetic fallacy makes the mistake of supposing that the source of an argument affects its validity. (Pirie 2006, page 82)

In everyday speech we often describe important properties as being ‘in the blood’ or ‘in the genes’ of things without meaning anything remotely biological. For example, I might say that teaching is ‘in my DNA’ to express the fact that I grew up around teachers even if no one in my biological family was a teacher. We also do this when describing things that we are naturally good at or that we enjoy doing. These are examples of what is known as a genetic explanation. Bell (2001) writes

Genetic explanations place things in time and are concerned with change. They connect present states with their origins, or at least prior states... Historical explanations are a special kind of genetic explanation (also so-

called narrative explanations). [Evolution by natural selection] is a kind of genetic explanation. (Bell 2001, page 195-196)

This basic meaning of ‘genetic’ predates its relation to the molecular structures found by Watson and Crick. The reason that the genetic role of DNA is significant is because of its function, not because the particular substances that comprise it are inherently genetic. Evolutionary biologist George Williams explains that “a gene is not a DNA molecule; it is the transcribable information coded by the molecule.” This is why many cognitive scientists, biologists and philosophers accept that we are comprised of many kinds of genetic structures in addition to our biological genes. Biologist Peter Medawar explains that the biological supremacy enjoyed by human beings is owed to our unique capacity for transmitting and inheriting information through nonbiological channels. The term ‘meme’ was coined by Richard Dawkins to refer to the units of cultural information that guide our thoughts and behavior. Daniel Dennett (2017) argues that memes are ways of behaving that can be “copied, transmitted, remembered, taught, shunned, denounced, brandished, ridiculed, parodied, censored, hallowed” but unlike instincts, memes are transmitted perceptually. That is to say, when a meme’s phenotypic effects (i.e. a behavior) are broadcasted and detected by the sensory organs of another brain, it is then replicated in the receiving brain. The process can then repeat, propagating new copies or combinations with other memes. Dawkins (1982) defines memes in detail:

A meme should be regarded as a unit of information residing in a brain. It has a definite structure, realized in whatever physical medium the brain uses for storing information... This is to distinguish it from its phenotypic effects, which are its consequences in the outside world. (Dawkins 1982, page 109)

According to the memetic model of cultural evolution these units of psychologically encoded information are just as much a part of our genetics as the information that is encoded into DNA. Williams argues that it is the inherited nature of certain information that makes it a part of our genetics in the sense of evolutionary theory. He explains “a gene could be defined as any hereditary information for which there is a favorable or unfavorable selection bias.” With respect to psychological persons, Daniel Dennett argues that minds are actually the creations of memes. It seems appropriate to understand this as an important claim about our psychological constitutions, which is more important for my argument than the meme theory itself. Dennett (2010) warns that identifying with our genes more than we identify with our memes commit ‘the most egregious error of pop sociobiology.’ He argues that the polarity of thinking in this way is unsustainable:

It cannot be "memes versus us," because earlier infestations of memes have already played a major role in determining who or what we are. The "independent" mind struggling to protect itself from alien and dangerous memes is a myth. There is a persisting tension between the biological imperative of our genes on the one hand and the cultural imperatives of our memes on the other, but we would be foolish to "side with" our genes. (Dennett 2010, page 345)

Dennett claims that once memes find their ways into our brains and converge, they produce a mind. It is the unique combination of memes that makes individuals special and endows our species with the ability to ‘rise above the imperatives of our genes’. In the literature on memes, there is already a precedent for thinking of oneself as having genetic origins in the brains of others. These claims are all consistent with the psychological view of persons, including the narrative conception of personal identity

which Dennett also advocates. Memes are the constituent units of psychological selves. Philosopher David Hull (1982) argues that what makes two items instances of the same meme cannot be merely qualitative or determined by what it causes, as being the same meme requires being related by descent. Dennett (1993) acknowledges that there are emotional reasons why someone might feel hesitant to accept this view:

I'm not initially attracted by the idea of my brain as a sort of dung heap in which the larvae of other people's ideas renew themselves, before sending out copies of themselves in an informational Diaspora. It does seem to rob my mind of its importance. (Dennett 1993, page 21)

But it seems that we are also familiar with thinking about ourselves as having psychological precursors in the minds of others and that these details are independent of biological precursors. If my doctor wanted to check if I might develop food allergies she might do a blood test or pull up my family records. If she wants to forecast how I might answer a question about reference, she should start by reading a few papers by Quine. A philosophical genealogy can explain what someone thinks or predict how they might think in the future. So if I explicitly identified myself as a Quinian this would be a genetic statement. It has a different sense than if I claimed to be a biological descendent of Quine's. But the statement 'I am a Quinian' seems to make an assertion that is close to 'I am a psychological descendent of Quine', 'Quine is my psychological precursor' or even 'Copies of Quine's ideas are determinants of my actions and beliefs'. These statements are not unconventional ways of thinking about psychological relationships. In fact, it is normal for philosophers, scientists and other academics to be identified by precursors in the form of their PhD supervisors. It is also common for artists and craftsmen to identify

genealogically by precursor relations. So it is intuitively plausible that persons have their psychological precursors as a part of their identity. This does not require the acceptance of meme theory, as other models of cultural evolution also suffice. For the rest of this chapter I will continue to refer to memes, but if the reader prefers another theory, substituting it will not change this central argument about precursors. I reject meme theory while holding that it serves fine as a metaphor.

It seems natural that one's psychological precursors should influence personal identity just as a wooden box's precursors determine its identity. If we are to acknowledge that the psychological view of persons is true, then it seems psychological precursors track the only ancestral relations that can be essential to a person's identity. After all, it does not seem that a psychological theorist could entertain the possibility that ancestry relations determined by the biological traits of bodies (like genes) are considered relevant to personal identity, without contradicting the basic premise of the theory. Given that biological bodies are inessential to one's survival as the same person, it is unclear why any difference would be considered for the inception of that body. Rather, if the psychological theorist suggests that biological origins are essential (unless indirectly, via the narrative) then she has already abandoned the psychological view in favor of a hybrid theory that also weighs biological traits.

4.2 Self, Lineage and Imitation

Is it informative to group persons into psychological populations? Daniel Dennett argues that is quite possible that further analogues between cultural and biological evolution

await discovery. That is to say, that besides memes, it is not unreasonable to suppose that there might be a recapitulation of other entities, principles and relationships that were first observed in the context of evolutionary genetics. For instance, he suggests that it could be the case that “there are strict analogues of phenotypes, genotypes, sexual reproduction, sexual selection, DNA, RNA, codons, allopatric speciation, demes, genomic imprinting, and so forth the whole edifice of biological theory perfectly mirrored in the medium of culture.” This section considers musical traditions as lineages that might also be informative groupings of persons. In *The Selfish Gene*, Richard Dawkins argues that a central difference between genes and memes is that the latter are standardly transferred by means of imitation.

If a scientist hears, or reads about, a good idea, he passes it on to his colleagues and students. He mentions it in his articles and his lectures. If the idea catches on, it can be said to propagate itself, spreading from brain to brain. (Dawkins 2016, page 192)

Musicians often describe the moment that they decided who to imitate as having been of essential importance for the development of their identities. For example, if you are familiar with the contemporary blues genre, you might notice upon hearing John Mayer play the guitar that he was significantly influenced by Stevie Ray Vaughan. Mayer describes the experience of discovering Vaughan’s music as life-changing in this way:

When I was 13 years old my next door neighbor handed me a blank cassette tape labeled Stevie Ray Vaughan and Double Trouble. I took it home I pressed play and started listening in the middle of what I later found out was ‘Texas flood’ and the second I heard it I knew that it was going to mean everything to me. (Santanello, 2018)

These occurrences are taken quite seriously by psychologists who study identity formation and skill development. Kemp explains that when someone is profoundly inspired to select a discipline, artistic medium or musical instrument to devote themselves to it is called a ‘crystalizing experience’.

These are the kinds of experiences that are by no means uncommon in the childhoods of musicians, and that are highly charged emotionally and motivationally significant... as an ‘overt reaction of an individual to some quality or feature of a domain: the reaction yields an immediate but long-term change in that individual’s concept of the domain, his performance in it, and his view of himself.’ (Kemp 1996, page 141)

Like Mayer, contemporary blues guitarist Kenny Wayne Shepherd also describes his discovery of Vaughan’s music in terms of his own crystalizing experience.

I grew up going to concerts and seeing some of the greatest musicians that played and one of those people was Stevie Ray Vaughan when I was seven years old and I got to meet him for the first time and from that moment forward all I wanted to do was play guitar. Stevie was singlehandedly responsible for me getting serious about playing guitar. (Recording Academy, 2014)

Just as you might recognize Vaughan’s influence in the playing of Mayer and Shepherd, you might also notice upon hearing Stevie Ray Vaughan that he was heavily influenced by Albert King. These four musicians are an example of how memes can survive across multiple generations of hosts. It is very appropriate to compare this process to the evolutionary processes that select for biological genes. In fact, Dawkins suggests that the processes are actually the same in both cases, “Just as genes propagate themselves in the gene pool by leaping from body to body via sperm or eggs, so memes propagate

themselves in the meme pool.” Similarly, Dennett (2010) agrees that ideas are selected by precisely the same evolutionary processes that drive genetic evolution.

Meme evolution is not just analogous to biological or genetic evolution, not just a process that can be metaphorically described in these evolutionary idioms, but a phenomenon that obeys the laws of natural selection exactly. The theory of evolution by natural selection is neutral regarding the differences between memes and genes; these are just different kinds of replicators evolving in different media at different rates. (Dennett 2010, page 345)

According to this theory, the similarities to genetic evolution hold true at both macro and micro scales. At the level of cultures, ideas that are popular during one period of music are engaged in competition to be carried into the next. For instance, some musical innovations that were present during the late Renaissance were propagated into the Baroque era. At the level of individuals, the competition of ideas can be observed between teachers and students. In fact, the influences selected by developing musicians are often seen later as expressing their psychological genealogy. For example, when an interviewer asked Vaughan if he was correct to note that there was a considerable amount of Albert King in his music he gave the following answer.

Yeah. [Albert King’s] my godfather...We were in Freedom Village, Mississippi... when he made it known, and he breezed right on stage and says ‘There ain’t but one white boy in the world whose got a black daddy, and [Stevie Ray Vaughan’s] him.’ (VH1 Legends, 1999)

Conceiving of musical traditions as temporally extended psychological lineages does not require commitment to any particular theory of cultural transmission. For example, even when no living precursor is present to broadcast ideas, the ideas that are physically embodied in a culture’s instruments might be considered a means of continuing lineages.

In *The Musical Temperament* Psychologist Anthony Kemp describes his own crystalizing experience with the pipe organ as feeling that the organ itself spoke to him directly, he writes “I knew from that moment on that I wanted to, and would, become an organist. Nothing mattered to me more.” Kemp is also confident that the time he spent practicing at the organ left a permanent impact on his personality. He concludes that he was drawn to the pipe organ because something about “the response of these rich, baritone pipes possibly presented me with the nearest thing that I had ever experienced to possessing the father from whom I had been separated from the age of 2.” In other cases, it seems reasonable to think of the precursor relationships between musicians as analogous to parenthood. Some of the memes that existed in King’s brain survive today by inhabiting a younger generation of guitarists who perhaps encountered them in music from Mayer or Shepherd. Some memes might have also been born in the subsequent minds that make up this multigenerational tree. Individuals with training in music theory can forensically determine the phylogenetic relations between musical ideas just as a biologist might. This sort of analysis is also similar to how an anthropologist might view works of architecture or pottery to make informed inferences about the conditions of its construction. For instance, this has been done to the blues to map its spread across America before documentation. So it is reasonable to ask whether memes from Africa are any less African than genes from Africa. If there is no reason for thinking that this is the case, then it should also be asked whether a person comprised mostly by African memes is less African than an organism comprised mostly by African genes. Perhaps in another possible world, having one drop of African memes makes a person black. The point I am

raising is not dependent on their being anything accepted as an African meme, since I do not want to overemphasize the importance of meme theory for my view. The larger point is that traditions are not arbitrarily related to their origins. Musical practices have physical and geographic histories that make important contributions to their transmission and development. Musician and writer David Byrne (2012) explains

Percussive music carries well outdoors, where people might be both dancing and milling about. The extremely intricate and layered rhythms that are typical of this music don't get sonically mashed together as they would in, say, a school gymnasium. Who would invent, play, or persevere with such rhythms if they sounded terrible? No one... The music perfectly fits the place where it is heard, sonically and structurally. It is absolutely ideally suited for this situation—the music, a living thing, evolved to fit the available niche. That same music would turn into sonic mush in a cathedral. Western music in the Middle Ages was performed in these stone-walled Gothic cathedrals, and in architecturally similar monasteries and cloisters. The reverberation time in those spaces is very long—more than four-seconds in most cases—so a note sung a few seconds ago hangs in the air and becomes part of the present sonic landscape. A composition with shifting musical keys would inevitably invite dissonance as notes overlapped and clashed—a real sonic pileup. So what evolved, what sounds best in this kind of space, is modal in structure—often using very long notes. (Byrne 2012, page 16)

With this plausible account of how environments shape the development of musical practices, it is intelligible to think of African music as bearing African qualities or Scottish music bearing Scottish qualities in a way that is tied to the physical properties of physical Africa and physical Scotland. This also suggests that there might be non-trivial psychological aspects of 'being African' that extend beyond biological traits, into the kinds of thoughts and cognitive processes that are appropriate to that environment. This is akin to the account given by Richard Nisbett in *Geographies of Thought*. Nisbett argues that the psychological traits that are upheld by a culture are selected for the ecological

reasons. For instance, he explains that the curiosity and value of knowledge that characterized the Ancient Greeks is owed by their location “at the crossroads of the world”, which exposed them to high volumes of conflicting ideas, traditions, ethnicities, etc. Nisbett contrasts this with the range of experiences and social demands placed on citizens of Ancient China, whom would “rarely have encountered anyone having significantly different beliefs or practices.” He writes

The ecologies of ancient Greece and China were drastically different— in ways that led to different economic, political, and social arrangements...The ecology of China, consisting as it does primarily of relatively fertile plains, low mountains, and navigable rivers, favored agriculture and made centralized control of society relatively easy. Agricultural peoples need to get along with one another— not necessarily to like one another (think of the stereotype of the crusty New England farmer)— but to live together in a reasonably harmonious fashion... The ecology of Greece, on the other hand, consisting as it does mostly of mountains descending to the sea, favored hunting, herding, fishing, and trade (and— let’s be frank— piracy). These are occupations that require relatively little cooperation with others... peasants. The Greeks were therefore able to act on their own to a greater extent than were the Chinese. Not feeling it necessary to maintain harmony with their fellows at any cost, the Greeks were in the habit of arguing with one another in the marketplace and debating one another in the political assembly. (Nisbett 2004, page 34)

In light of Nisbett’s account, it seems that saying that an idea or practice is “very Greek” or “very Chinese” can be separated from the associations that we typically make to ethnic populations. That is to say, that what is considered Greek or Chinese in both the sense of one’s bodily traits and what is considered Greek or Chinese in the sense of one’s cultural traits might have a common physical basis in the ecological setting.³ It is reasonable to

³ A word of caution: since the publication of Nisbett’s initial data about Eastern and Western thinking styles in geographies of thought, subsequent studies have found that differences also exist at smaller levels than these categories reveal. For instance, I discuss in the next chapter cognitive differences between Asian languages. So it is important not to assume that these categories reveal essential or natural kinds, rather than mere informative generalities.

argue that approaches like Nisbett's take a too monolithic view of cultures and generalize important historical nuances into course-grain phenomena like 'agricultural' modes of production. But even if we reject the explanations from Dennett and Nisbett, it seems that a physical story like the previous account given by Byrne (2012) about music and acoustic spaces, it even seems plausible that we might expect certain musical traits to be correlated to levels of skin pigment and other biological traits that are influenced by climate. That is to say, if it is an acceptable simplification to say that darker complexions are beneficial in warmer environments and lighter complexions are beneficial in colder environments, it seems fairly plausible that Byrne's point about indoor and outdoor music might be extended to the thermal ecologies of Africa and Europe.

Historically, the word 'black' was not just used to refer to biological traits that are inherited, but also psychological traits like musical ability, since those qualities were considered to be inherent to blacks. In fact, the association between musicality and 'blackness' in the form of inborn talent is quite old. Music historian Paul Oliver (1998) explains that "the Negro's innate sense of rhythm' or 'his natural singing ability' are cliches of writing on the Black American which have been endlessly repeated." It might not be fair to reduce this entirely to racism. This might be to ignore that there are considerable conceptual differences between musical traditions from different continents. Oliver continues to suggest that these differences are conspicuous

It is evident to the most casual listener that the blues, jazz, ragtime, gospel song and other forms of African American music have certain qualities that are not familiar, or not as marked, in the western traditions of either formal or folk music. (Oliver 1998, page 20)

These conceptual differences can be tracked across multiple dimensions, like the amount and placement of notes in a scale or how time is measured. But it is not obvious that there is any impartial framework for drawing such comparisons. Some experts suggest the qualities of these traditions cannot be translated or understood in mutually fitting terms, citing that the music is fundamentally different in the kinds of traits it possesses, others assert that the differences arise in degrees. Determining what the proper ways of configuring these fundamental differences of musical schema are an ongoing source of controversy amongst musicologists and historians. Ekweueme (1974) writes

Several so-called experts have claimed that there is no harmony in African music. What they probably mean is that African harmony does not obey the general rules (including tonic-dominant relationships) of classical western harmony... Traditional African harmony has its own logic. (Ekweueme, page 133)

Perhaps when Thomas Jefferson wrote that blacks seemed “more generally gifted than the whites with accurate ears for tune and time” he was describing these clear differences between African and European music. Musicologist Arthur Jones suggests that drumming plays a role in African music that is absent in Western music. He suggests that in terms of rhythm, “African music differs fundamentally from the music of the West.” A view that, if true, makes Jefferson’s statement that blacks seemed more musically gifted less surprising. Jones (1954) continues to say:

The characteristic feature of African music is its rhythm... Rhythm is to the African what harmony is to Europeans and it is in the complex interweaving of contrasting rhythmic patterns that he finds his greatest aesthetic satisfaction. To accomplish this he has built up a rhythmic

principle which is quite different from that of Western music and yet is present in his simplest songs. (Jones 1954, page 26)

Given its primacy in African music, rhythm is likely one of the traits that people have in mind when remarking that Stevie Ray Vaughan ‘sounds black.’ The fact that these musical qualities turned out to be memes and not caused by genes had to be discovered. So during Jefferson’s lifetime, it probably seemed plausible that Stevie Ray Vaughan could never possibly sound as black as he did. This is a tenable explanation of why Jefferson considered it an open question whether blacks could create music in the style of European composers. It is not clear that there was something malicious behind this question. It was not always considered obvious that culture played the role that it does, although there is a sizable consensus today. Oliver (1998) explains:

For the ethnologist... the problem of inherited and learned abilities is a considerable one; whether in any way race may decide innate abilities or whether culture may develop them. The consensus of opinion argues for cultural rather than racial influences on the development of a particular ability shared within a social or ethnic group. (Oliver 1998, page 20)

Given that these memes were associated with blackness, it might be racist to deny that the memes are black depending on the organism that presently carries them. So it seems appropriate to ask whether someone who has the musical memes that were responsible for these perceptions about blacks is in some sense black themselves. This is a philosophical question about reference. I am not suggesting that anyone should substitute the term ‘black culture’ with ‘psychologically black’. That would be pointless. But introducing an expression like ‘psychological blackness’ might allow us to refer to things in ways that would increase the clarity of this discussion.

The first option that seems somewhat plausible is to say that a meme is ‘psychologically black’ if it evolved in the same environmental conditions that produced African morphological traits. This would be like how we sometimes define music by where it is listened to (e.g. elevators, nightclubs, campfires). It might not say anything about a meme’s relationship to any present culture. It is possible for a meme to go extinct in its original culture and to continue in other cultures. But an advantage of this approach would be that it offers a non-arbitrary way to think about what is meant for someone to sing or dance like a black person. A potential criticism of this approach is that many of the morphological traits that we consider African have also evolved separately in other populations. On the one hand, if we are understood to be referring only to the African continent and limited to a certain window of time, this does not seem obviously problematic. On the other hand, it might weaken the meaning of what it is to sing and dance like a black person, if those traits can be shared by persons with any genealogy. A second option that I find less plausible is to say that a meme is ‘psychologically black’ if it arose from a specific period or historical setting, like blues music did in the American South. A problem with this approach is that it is not obvious what fixes the reference unless the period is already well defined. Historians often disagree about when periods start and end on the basis of arguments that are less objective than biological facts. So this might be somewhat less precise than simply co-referring to the geographical context of African morphological traits. A third option is to group memes on a case-by-case basis, depending on expert testimony. This is to say that, depending on who one considers credible and the associations that individual has with a given group term. This seems to

be common, if it is not the default approach. Such appeals might not ever refer to anything historical or objective, as it is up to the individual's credibility to enforce distinctions. For as long as this continues, people will probably continue to disagree fundamentally.

Depending on which conception is selected, it may or may not seem meaningful to call Stevie Ray Vaughan's psychology black. I have in mind the fullest consideration of his personal identity, in the sense of the psychological view. But others might see a gap between questions about Stevie's musical identity and his personal identity (e.g. that one is black and the other not). One might not recognize the benefit to distinguishing the musical self from his psychological self, unless there are important psychological traits without musical correlates. It seems premature to attempt to settle this, so I will address both possibilities. It is clear that music does express facts about the psychological self, but not whether it expresses all of the facts we want to consider important. An example of an area where musical identity was discovered to pour into what we standardly consider to be psychological identity is personality. For example, one such important pattern in the literature links musical preference and neuroticism. Kemp (1996) writes

Payne [hypothesized] simply that stable or non-neurotic types would show a preference for classical styles and those attracted to romantic styles would be significantly more neurotic. Having classified a collection of 42 composers into their 'relative classicism' and 'relative romanticism' using a set of musical experts, she constructed a questionnaire in which a group of students, and a second one of older listeners, were asked to list their favorite six composers. They were also asked to complete Eysenck's personality test and three of Wing's tests of musical aptitude. Her results showed that neuroticism was indeed a powerful factor in discriminating

between classical and romantic musical preferences, and also in the expected direction. (Kemp 1996, page 124)

This suggests that a person's musical preferences not only express the otherwise narratable facts of their collective identity (e.g. cultural upbringing or social class) but facts about who they are as individuals. It could also mean that musical judgments express some of the psychological facts that we typically find in narratives. A second area where the musical self blends into the traditional territory of the psychological self is gender identity. Studies suggest that musicians display higher gender-role adaptability or 'psychological androgyny' compared to non-musicians. Kemp attributes these findings to the fact that both male and female musicians must possess "introversion, independence, and personal autonomy to direct their lives according to a well internalized and idiosyncratic self-concept" in order to handle the cognitive and emotional task-requirements of musical development.

So, one option is to say that Vaughan had a 'black' way of expressing himself musically. I consider this less interesting than the suggestion that something was black about his mind. It is unclear, however, that having a black 'musical identity' or black 'musical memes' relates to the constitution of the self or whether any degree of those elements would suffice to say that a person is psychologically black in terms of their self (as a total generality) or self-representation (in a particular modality). It seems clear that Stevie Ray Vaughan had the blues and the blues was of both African and European origins. It is important to emphasize the hybridity of psychological and musical identities. Oliver (1998) explains:

[Blues] music was at least part African, even if it was also part European; it demonstrated processes of enculturation (the psycho-social mechanisms by which one generation passes on the behavior patterns of the culture to succeeding generations) and acculturation (the confluence of those African elements with the Anglo-Celtic traditions). Blues is a late phase in both processes: the distant African heritage was still maintained through the work song to the field hollers, while the adoption of European harmonic structures led to the definition of the blues form. (Oliver 1998, page 21)

Whether the fact of Vaughan's blues prowess only reveals the blackness of his musical self or can be extended to his psychological self depends on other factors, like whether we accept a distinction between the musical self and psychological self at all or what it means to be psychologically black. It seems straightforward for the meme theory that any musical ideas would have been psychologically constitutive of Vaughan, since memes are conceived by an analogy to compositional units. For example, Dennett argues "a human mind is itself an artifact created when memes restructure a human brain in order to make it a better habitat for memes." So if the memes that are in our brains create our minds and if our minds are who we are as persons, then it seems reasonable for a psychological account of personal identity to refer to the properties of our memes in the way that a biological account would make reference to the properties of genes. So a seemingly relevant parallel might be to emphasize the identity constitutive role of the ancestral populations that carried one's memes. In the same discussion of memes, Dennett adds that "Native Chinese minds differ dramatically from native French minds, and literate minds differ dramatically from native illiterate minds." This plausible as a statement about languages, not nationalities. On this principle, if one's psychological ancestors were psychologically black then it follows that the individual is at least partially black.

This would seem like enough to argue that Stevie Ray Vaughan was ‘black’ to some degree by virtue of his psychological constitution. It is less clear that the alternatives to the meme theory will suggest that Vaughan was ‘psychologically black’, in virtue of having a black musical self. I dislike the phrase ‘psychologically black’ and think it would be better if there was a different way of referring to whatever people have in mind when they speak of traits in this way. It might be helpful if it could be replaced by a more specific term, so that it does not seem that I am endorsing this sort of generalization. I think this discussion requires its own careful treatment, so this is tackled in chapter five.

Regardless of what the answer to any specific identity question is or whether the question is answerable at all, it seems definitional that the only ancestral relations that are constitutive for the psychological account must be psychological in nature. This is only to say, that when the psychological theorist answers a question about personal identity, his answer must draw primarily, if not exclusively, from psychological considerations. So, when the psychological theorist is asked to consider “Was Stevie Ray Vaughan black?” he might have no answer, but he should take no direct interest in his biological genes at all, unless he has interpreted the question to be about the body and not the person. He might deny that the idea of a ‘psychologically black’ person has validity, however, he should not take an interest in the traits of Stevie Ray Vaughan’s body at any stage of its existence. This must include the original sperm and egg as well as it does every moment of its life—that is, if he is considering the race as a trait of the psychological person and not a trait of the body inhabited by the person. As Dennett explains, the sperm and egg were responsible for creating the ‘meme vehicle’ that we call the body, but it was the

congregation of memes that created the unique mind that is the person. In short, the psychological theorist must interpret any question about persons as referring to a different kind of entity than the biological theorist would for the same question. This is to say, that the psychological theorist must think of the person in question as something constituted by psychological traits alone, even if it is economical to track such beings spatially by the creatures they inhabit. Dennett (2010) writes that “What makes a person the person he or she is are the coalitions of memes that govern—that play the long-term roles in determining which decisions are made along the way.” This suggestion has a special relevance for the ideas that blues musicians use when engaged in musical improvisation. It is important to understand that while improvisation involves a creative aspect of spontaneous expression, it also involves a participatory aspect within a normative tradition. Ethnomusicologist Paul Berliner (1994) explains how the false impression that improvisation involves creating ‘something out of nothing’ overemphasizes the spontaneous aspect of the activity:

This simplistic understanding of improvisation belies the discipline and experience in which improvisers depend, and it obscures the actual practices and processes that engage them. Improvisation depends, in fact, on thinkers having absorbed a broad base of musical knowledge, including myriad conventions that contribute to formulating the ideas logically, cogently, and expressively. (Berliner 1994, page 492)

In a genre like the blues which focuses heavily on improvisation, it makes sense that musicians identify closely with the artists that influenced them most in developing. The role models that a beginner musician chooses offer something like a paradigm. The habits that one learns in that period often have a unique and lasting impact on how they will

think musically for a lifetime. Kenny Wayne Shepherd suggests this is a universal, “you hear in all great musicians, their influences and the people they looked up to in what they do. B.B. King is like a father to me.” If the genetic origins of persons are determined by the memes that comprise their mind, it might be easier to imagine John Mayer having been born to different biological parents than to imagine how John Mayer’s music would sound if he had never heard Stevie Ray Vaughan. Dennett does not seem to think that the identity of memes or genes are essentially dependent on their historical origins. He is open to the possibility that extinct memes or genes might come back. The only difference seems to be that they would not be descended from the original copies. Dennett (1993) explains

A meme’s existence depends on a physical embodiment in some medium; if all such physical embodiments are destroyed, that meme is extinguished. It may, of course, make a subsequent independent reappearance—reappearance—just as dinosaur genes could, in principle, get together again in some distant future—but the dinosaurs they created and inhabited would not be descendants of the original dinosaurs—or at least not any more directly than we are. (Dennett 2017, page 21)

I am undecided about whether it is better to call memes or genes that reappear the same as the ones that existed before. I would prefer to leave the question open for now, since it is likely to have many consequences. Stevie Ray Vaughan is an excellent case for the question of psychological blackness we are after. He was an ethnically white man who confessed to his bandmates that he considered himself ‘a black man in a white man’s body’. This might be easier to dismiss if he was not celebrated as a pioneer in an almost entirely black tradition. But all of the most prominent blues musicians have payed tribute

to Vaughan as a master of the blues. In an interview preserved in *Texas Blues: The Rise of a Contemporary Sound* bluesman Tutu Jones described himself and Vaughan as having both been ‘born’ into the blues. Note that Jones’ account is dense with genetic metaphors and positions himself and Vaughan in the same relationship to this traditionally black form of music. Given that Jones was black and Vaughan was white, it seems that the sense in which they shared a common ancestral lineage was psychological, not biological.

He begins by describing his own musical heritage in the blues:

Music was in my genes. I was born with it. It comes from both sides, my dad and my mom. My mom’s grandparents were musicians, too... I give all the most credit to guys like B. B. and Freddie and Albert and even my daddy. My daddy was a part of that generation. (Govenar 2008, page 160)

When he transitions to speaking of Vaughan he continues with the metaphor of birth in a sense that is thoroughly memetic. Jones argues that while anyone might be able to buy a guitar and to get on stage to play the blues, one needs to be ‘born into’ a lineage of blues musicians in order to have the blues.

You have to be born with this stuff. You have to be born and raised around it. For example, if you took a white guy like Stevie Ray. And they say “Well, man, why does he sound so much like a black man?” You want to know why? He was raised around black folks, and it rubbed off on him. (Govenar 2008, page 161)

Before the Ancient Greek term ‘génésis’, the root gene-* appeared in the Proto-Indo-European language where it was associated with giving birth and being born. These statements about Vaughan’s having been ‘born into’ the blues make sense when understood in terms of his psychological origins, but not if they are understood in terms of Vaughan’s biological origins. What ‘rubbed off’ on Vaughan was a collection of black

psychological memes. This hardly seems like a controversial way of thinking about memes or like it mischaracterizes the description from Jones.

He was another who had the blues born in his genes. You just can't go home, put on a record, and play the blues. The stuff's got to be in your blood. You got to come from a bloodline of it in order to make it feel right, in order to sing it. (Govenar 2008, page 161)

Jones appears to be saying two important things here. Firstly, that some of the blues memes are not preserved effectively by recordings. Secondly, that it is essential that those memes are received directly from an appropriate psychological precursor. These points are not obviously true or false. It depends on what he has in mind, like whether his conception of the blues requires certain relationship to oneself or others as would be required for 'authenticity' or 'paying dues'.

It is tenable to interpret Jones' statements as meaning that some memes are not transferred across all mediums. On the one hand, there might easily be subtle nuances of technique (e.g. singing only from the diaphragm) that are only perceptible in person. On the other hand, one might question why modifying a few techniques breaks the identity of the lineage. One might suggest that how a record player limits the memes that propagate is analogous to population bottlenecks, but that Jones seems to suggest that it is like an extinction. It seems fair to ask why the surviving memes constitute something different. For example, Eric Clapton taught himself to play the blues in the exact way that Jones says is inadequate. Whereas Vaughan grew up playing in blues clubs around Texas, sharing stages with the older black musicians he admired, Clapton learned by listening to recordings several thousands of miles away in South East England. In truth, I reject the

idea that memes actually exist. Still, it does seem that both Clapton and Vaughan share common African psychological precursors in the blues. That this discussion is even intelligible seems to answer the earlier question of whether it is potentially informative to group persons into psychological populations. It seems that we do this frequently.

Chapter 5 **Diversity and Sensory Integration**

Now we are familiar with thinking of diversity in terms of appearances, behaviors, beliefs and norms. But an overlooked sense that is no less important is the diversity of psychological configuration across human populations. In previous chapters we discussed how, for instance, one's culture and life experiences collide to generate unique schema for interpreting perceptual inputs across various modalities. This view entails that minds are more than collections of memes. For instance, an individual's auditory schema will dictate which sound patterns they perceive 'as music' as opposed to 'as nonsense' or 'as language'. Likewise, a person's culture equips them with a visual schema that determines how they perceive spatial relationships or how they distinguish and categorize colors. This is why optical illusions are often not effective across different cultures—some eyes are more discerning with regards to perceptions of certain kinds. The configuration of a person's senses is dynamic, depending on the type of environment they need to survive in (culturally and ecologically).

Consider that the primary reason you cannot use echolocation is simply that you have not practiced it enough, although it is easy to find videos of blind people

skateboarding, sprinting and rock-climbing using a learned sense of echolocation—in these cases the brains of such individuals are wired differently, so that their visual cortices (that you and I use for seeing) are involved in processing echoes. This leads me to three points of emphasis. Firstly, it is worth granting that there is no reason that an entire culture could not exhibit this rare behavior. Secondly, it is conceivable that our own culture could shift in that direction if certain external conditions forced us to adapt (e.g. a virus that causes blindness across the world or some unforeseen consequence of climate change blocking out sunlight). Lastly, while there are behaviorally significant gaps between persons that cannot use the same senses to accomplish the same tasks—there are also an important shifts during the course of each person’s life. Over time, our sensory modalities develop at different paces and renegotiate their relationships to one another. Consider how consequential it can be to a person’s sense of self to cultivate a new skill in a given modality. For instances, when a person acquires the visual proficiency needed for ‘being literate’, this is relevant to their identity in a narrative sense as well as a phenomenological sense. Likewise, when a person acquires skills like recognizing musical scales by hearing, the identity of ‘being a musician’ is also relevant to both their narrative identity and their first person experience of sounds. The same is likely true of an enormous array of examples, like when a person learns to control and sustain the proprioceptive attention needed for ‘being a ballerina’. What these examples share is that they appreciate how having a highly developed proficiency for processing information in a specific sensory modality is often central to a person’s identities in ways that might be overlooked. But this is important to understanding what it feels like to think and to

experience as oneself and it will be important later when we attempt to make informed generalizations about what it means to think in a way that is typified by a specific culture. I want to encourage us to try thinking of cultures as configurations of cognitive embodiment. The flip side to speaking of different configurations of embodiment is to refer directly to the sensory modalities, but the point can be developed just as well while making reference that revolves around either the sensory modalities or the sensory organs themselves. Before addressing questions about the psychological meanings of terms like ‘blackness’ and ‘whiteness’, I’d like to start with a few seemingly indirect points that will gradually encircle the topic of race and cognition in a way that I think is worthwhile.

Imagine that I am a tiger dad with identical adult triplets and suppose that my sons identify heavily with their careers, which are: (1) truck driver, (2) flight steward and (3) taxi driver. What might it mean for me to think that my sons careers are central to who they are? Well, it might just be that I believe that their life-stories should not be told without including mention of their jobs in the basic narrative sense. But is there also a way that my belief could depend on something further about their psychological identities? For instance, what expectations might I have in mind while saying “I believe that my sons are perfect fits for their respective jobs”? Well, we discussed in an earlier chapter that occupational psychology is abundant with data suggesting that persons in specific careers tend to display similar patterns in terms of personality traits, neurosis and emotional temperament. But this discussion did not consider how occupations relate to patterns of sensory perception—So, naturally, tiger dad that I am, suppose I’ve taken a strategic fascination in how the minds of my sons are changing in response to their

different job requirements; It seems fair for me to assume that my sons will eventually acquire different proficiencies for handling information competently in different domains (as the natural result of repeating different tasks daily). Suppose that I take them all to the county fair and that I intend to strategize by picking which son will be the most competitive for winning specific games. The first tent game is named “Vision-based equilibrioception” and involves using a robotic claw to balance iron cubes on an unstable surface. Fortunately, I am already prepared to compare my sons quickly relative to my expectations about their proficiency for reasoning in different sensory modalities! Still, it is interesting to note that I would find that they are all similar and dissimilar in different ways. Well, as it just so happens, “Vision-based equilibrioception” is the exact sensory domain in which it seems fair for me to expect that two of my sons might have a higher proficiency than their brother. That is, I might assume based on what I can infer about their lives that my son who identifies with ‘being a truck driver’ and my son who identifies with ‘being a flight steward’ might have better odds than the son who identifies with ‘being a taxi driver’. Is this assumption unfair? Not really, because the former two jobs demand a proficiency for balancing the weights of heavy objects inside finite spaces, which taxi driving does not require. But when the next tent challenge reads “Vision-based navigation” I feel justified to expect that the taxi driver or truck driver would both have greater proficiency than the flight steward. This would be especially true if the son who is a steward only flies on the same route from Buffalo to Baltimore and back daily, but the taxi driver and truck driver navigate many unique routes across an area spanning several states. It hardly sounds controversial to assume that part of ‘being a truck driver’ involves

developing a heightened awareness to spatial orientation, map interpretation or other processes relevant to navigation—and perhaps also things visually predicting the fit of objects between each other or through passageways. As such, a truck driver who identifies with ‘being a truck driver’ might be proud of the service they provide in an easily narratable sense. But it also seems plausible that if someone considers a particular activity or behavior a central part of their identity in a substantial way, that they are probably not just remarking about the historical sequence of events that we might write and read, but also how they feel when living in general. I am taking those statements very strongly, so that saying ‘I am a truck driver’ means that one feels the contribution that that activity has exerted on their cognitive identity as bearing an implicit weight during unrelated experiences. I think this might be less original and controversial than it sounds at first, if we consider how often we explain our unexpected moments of insight, knowledge or perceptiveness to our peers who ask us ‘How did you know X?’ by giving answers of the form ‘Oh, I studied wine-tasting in college’ or ‘Oh, I was a boy scout for several years’.

In this example, you might contrast the sons to individuals who have developed differently based on their life experiences. Alternatively, you might consider the pattern modeled by their different careers as resembling of different identity groups like cultures or generational cohorts. What seems useful about this discussion is that it is a simple case in which we would all probably share the same expectations, even though those judgments suggest other interesting and significant differences. It also helps that they are triplets. Our assumptions might also entail statements about how their minds are

configured differently. In other words, statements that should be explanatory about what it feels like to be that individual in question even when they are not performing the specific task that gave them the proficiency in one or several particular modalities.

In addition to the diversity of proficiencies and skills that will be cultivated during any ordinary lifetime, there are also cases when we should expect diversity in perceptual experiences (even between biological triplets) that do not involve conscious awareness. Here, the interesting cases have to do with same topic of integration, particularly how our brains learn to compensate for the common challenges of indeterminacy in interpreting the physical significance of most sensory inputs. Objectively accurate perception is not preferred to coherency. Callan and Ando (2015) explain that our brain's filters must to some extent always be involved in actively preventing us from noticing conflicting sensory information. For instance, even while engaged in tasks as simple as watching movies, one's brain must coordinate sounds that comes from the speakers to the on-screen events. For this to work in a way that seems believable enough for us to enjoy it (let alone to comprehend it), our brains must learn to grant visual cues primary authority for determining spatial localization. This means that a visual cue has the ability to override conflicting cues from other modalities (e.g. conflicts with the loudspeakers are on the floor beside you). In the literature it is called 'ventriloquizing', as the brain suppresses available data about a sound's source to collocate it with a visual content. This exemplifies the concept of sensory dominance—when data from one sense is promoted above others to dictate representations and inferences. Bruns and Röder (2014) explains that ordinarily "vision captures sound" meaning that visual localization processes

dominate sound localization unless vision is blurred, in which case sound dominates vision. This would seem to indicate that with respect to our present cultural norms for processing spatial cues, our embodiment is generally more visual than auditory.

In the well-known ventriloquism effect, the perceived location of a sound is shifted toward the location of a concurrent but spatially misaligned visual stimulus. This perceptual illusion can be explained by the usually much higher spatial resolution of the visual system as compared to the auditory system. Recently, it has been demonstrated that this cross-modal binding process is not fully automatic, but can be modulated by emotional learning .
(Bruns 2014, page 1)

Perhaps there is no better example of how the seemingly same mental processes can be embodied differently than Beethoven, whom continued composing music at the piano after becoming deaf to its audible sound. Long after it no longer perceived the physical sound waves from its environment—through the usage of the physical keyboard, Beethoven’s brain found access to its internal map of auditory space. This is comparable to silently ‘counting with the fingers’ without inner monologue (in a reverse way).

To stress the extent to which cognitive tasks become embodied in specific neurological pathways, let us ask ‘Why did deaf Beethoven compose on the piano?’ or more specifically, ‘Why did deaf Beethoven not retreat to composing on paper?’ Given that the loss of hearing did not affect his ability to write, it seems there was something preferential about writing at the piano. Some philosophers even argue that works composed at the piano, on paper, or in the head, bear artifacts of those cognitive loops. For example, Wittgenstein (1980) insisted that Brahms’ music necessitated pen and paper, whereas Bruckner might have composed in his head. This is conceivable, since sheet

notation affords different opportunities and limits than human memory. Indeed, the practice of counting silently is comparable to what deaf Beethoven did at his piano in that they both recruit the much-overlooked sense of proprioception. Cognitive scientist Johnathan De Souza (2017) explains the following about Beethoven's deaf improvisations at the piano

If listeners perceive actual sound in terms of imagined movement, Beethoven would instead perceive actual movement in terms of imagined sound. The muscular exertions of his hands, arms, and feet would mirror the music's melodic, temporal, or textural outlines. Moving at the keyboard for Beethoven would be like dancing to a silent soundtrack [a] musical mime that actualizes motor imagery already involved in musical listening. (De Souza 2017, page 9)

Note how the activity of deaf Beethoven composing at the piano also differs from the engagement of the subsequent performers who perform his compositions by reading the sheet music. Whereas sheet music utilizes visual processing to transmit musical inputs, Beethoven's improvisatory inputs were derived from what cognitive scientists describe as musical gestures, which originated in his motor system. The important difference is captured by an account from Merleau-Ponty (1945) about the relationship between a classical organist and sheet music. He writes:

Between the musical essence of the piece such as it is indicated in the score and the music that actually resonates around the organ, such a direct relationship is established that the body of the organist and the instrument are nothing other than the place of passage of this relation. (Merleau-Ponty 2013, Page 147)

But in the case of Beethoven, his body was the origin of the music not a vehicle for its passage. To be clear, let us distinguish the following cognitive inputs in terms of their embodiment:

(a) the proprioceptive inputs of deaf Beethoven (motor gesture)

(b) the visual inputs of Merleau-Ponty's organist (sight-reading)

If Beethoven's neurological development had been different, he might have sought a predominantly visual cognitive loop after losing his hearing. Let us include that possible world for comparison:

(c) the visual outputs of deaf Beethoven (visual-writing)

Note that I called the last option 'predominantly visual' as opposed to 'entirely visual'. It would be false to say that Beethoven's body would not be involved, given that writing on paper requires some degree of bodily awareness, even if the majority of the relevant tasks are performed by visual processing. It would also be an overgeneralization to say that deaf Beethoven's behavior did not involve any hearing of the music, since in all likelihood he still experienced the result of stimulations to his auditory cortex, even if they arrived from a different pathway. Similarly, it is not necessary to postulate without evidence (as some have) that Western music is 'less embodied' than African music, to entertain the hypothesis that the two musical traditions (and thereby the cultures surrounding them) are differentially embodied. Note that the Western Classical tradition has long been organized from composer to performer via the transmission of visual notation, whereas African music is not. This is sufficient to start comparing how the cultures distribute cognitive embodiment. For instance, in his phenomenological account of learning to play jazz piano, ethnographer David Sudnow suggests that visually opaque

hands—which result from heightened spatial awareness of one’s hands (i.e. proprioception) are foundational to performing jazz piano

While before I would look past the hand’s way to their destinations when a spate of that jazz was spotted my look now at times shifted back, the focal plane seemingly coming closer, and I would see a configuring hand, in a certain arrangement with respect to the keys, whose shaping was now being watched. (Sudnow 1999, page 95)

Sudnow explains that proprioceptively attending to one’s hand is so crucial to jazz that the catch phrase ‘let me see jazz hands’ is used as a reminder to performers to switch back into the correct gestalt. In other words, part of the learning curve is to recognize the contribution of the performer’s own hands to the problem solving load. He arranges the phenomenological extent to which ‘jazz hands’ manifest as a continuum

‘Singing with the Fingers’

Proprioceptive awareness of the hand’s shape in the ‘terrain nexus’ of the keyboard.

‘Singing along with the Fingers’

Internal auditory awareness of the melody that secondarily arrives at the hand.

Functional magnetic resonance imaging (fMRI) data confirms bidirectional coactivation of motor and auditory systems in trained musicians if either system becomes activated. (see De Souza pages 7-11) So it is consistent with studies of the brains of professional musicians that improvised movements originating from motor activity would be heard as singing and that improvised melodies that start in the auditory imagination would prompt immediate motor behavior. Sudnow continues:

A new sort of hookup between the singing me and these hands was developing, a new way of being [and] singing with the fingers emerging, as next sounds I would project began to come under the mutual jurisdiction of the positional

arrays of the hands. (Sudnow 1999, page 95)

Again, to avoid oversimplification of the relationship between culture and embodiment, let us consider an observation by Wittgenstein of how embodied gestures matter in classical music. In particular, he argues that the expression and communication of musical ideas sometimes requires gestures to bridge gaps that verbal prompts between performers and listeners cannot convey:

That is the direction one gives someone in playing a piece of music. ‘Play this as if it were the answer’—and one perhaps adds a gesture. (Wittgenstein 1990, Aphorism 247)

Wittgenstein points out that it is unclear that musical gestures can be translated directly into descriptive verbal statements that preserve the gesturer’s meaning. It also is not obvious that the musical act itself can completely express the gesture’s content. Still, it seems the gesture does inform the musical action in a way that is not random. In the same passage, he argues that words would not be able to accomplish the same ends as a gesture in relation to music:

But how does anyone translate this gesture into playing? If he understands me, he now plays it more as I want him to. But could you not give just such a direction but using the words ‘louder’, ‘softer’, ‘quicker’, ‘slower’? No: I could not. (Wittgenstein 1990, Aphorism 247)

Recent empirical study on gestures involved in learning and abstract reasoning not only vindicates Wittgenstein, they also suggest that certain ideas are communicated more usefully when gestured than when verbalized. Bjuland, Cestari, and Borgersen (2008) conclude from their studies that together, gestures and discourse “constitute mathematical reasoning”. It turns out that when students are tasked with communicating mathematical

ideas or engaging in collaborative learning tasks, gestures fill in abstract details that are missed by words. For example, gestures have been found to promote opportunities for ‘exploration and experimentation while working out mathematical ideas and for coordinating the work with given inscriptions’. One way that this occurs in math classrooms is by allowing students to focus on different representations of the same situations and to switch rapidly between them to compare complex abstract features.

Reynolds and Reeve (2002) explain that bodily gestures:

Show how missing or insecure mathematical terms can be overcome by providing additional reference to mathematical entity. Gesture thus can support mathematical communication by providing a joint visual reference for the participants. (Krause 2016, pages 10-11)

So Wittgenstein is on firm grounds for asserting that the common usage of gestural suggestions in music truly succeed at being ‘understood’ by players intuitively. As with musical learning, the same occurs if gestures are used in math classrooms. In both cases, the recipient adapts the information to conform to the gesturer’s embodied model of it.

Arzarello et al. (2009) write:

Analyses show the complex intertwining of gestures, speech, and inscriptions in learning mathematics. These ingredients jointly support the thinking processes of students in a unitary way... students create personal signs to express mathematical meaning. These can become endowed with meaning within social interaction by being used repeatedly... This allows the teacher “[to tune] with the students’ semiotic resources and [to use] them to guide the evolution of mathematical meaning. (Krause 2016, page 12)

Perhaps, what is remarkable is not that the gesture is understood intuitively, but the fact that ‘mere’ gestures—signals that cannot be translated entirely into speech, can surpass language. This idea from Wittgenstein is also supported by the empirical data as well. In

fact, cognitive scientist Christina Krause argues in *Mathematics in Our Hands* that gestures often “provide visual representations of a mathematical object that are not or cannot be represented in inscription” adding that the gesture space in front of a person is confirmed by multiple studies of advanced teachers and students to be the site revealing of ‘the conceptualization of more sophisticated mathematical ideas’. As such, it would seem ridiculous to think that embodied gesture is absent or categorically unimportant to Western music. Given that the empirical data shows that embodied gestures are even significant in classrooms where math is learned, not to mention where music is learned, it seems plausible that embodied gestures are as ubiquitous to human reasoning and communication as math or verbal language. General literacy has been found to permanently alter areas of the brain that are key to musical cognition (e.g. cross-modal processing in the auditory and visual cortexes). Given that the act of reading music in real-time is a vast neurological undertaking for any particular brain, it is plausible that the cognitive changes caused by the technology of sheet music also introduce phenomenological and logical changes elsewhere for a culture at large; historians and musicologists agree that there would simply be no such thing as Western polyphony (or for that matter Western Classical music) without the invention of musical literacy in the form of staff notation. I take it as perfectly uncontroversial that if any materials qualify as constituents of cognitive loops, that sheet music texts must count. No doubt, musicians and composers often credit musical contributions to the instruments themselves. For example, in a book about Chopin, the composer Willard Palmer notes that musical tempo

depends “to some extent upon the individual instrument and the room or hall involved in the performance.” From this, it might also be true that cultural variation exists in embodied gestures just as there is diversity across human systems of math and language. It does seem that Jazz musicians are expected to develop a different degree of proprioceptive awareness than classical musicians, which is used to keep the timing of the music with the body:

The great New Orleans-style trumpeter Tommy Ladnier required Doc Cheatham to imitate him by ‘patting’ his foot when they performed together. Ladnier insisted that it would teach Cheatham ‘how to play good jazz’ and enable him ‘to really feel what he was doing.’ ‘In order to swing, not just to approximate swing, the rhythm has to come from your body,’ Fred Hersch maintains. (Berliner 1994, page 151)

What is noteworthy about this example in comparison to the analyses given by Wittgenstein is that the gesture performs the same function but with an important twist. On the one hand, the same type of mental process seems to be occurring whenever two musicians use gestures to request, suggest or instruct one another (as discussed by Wittgenstein). So for the trumpeter Tommy Ladnier to instruct Doc Cheatham how to pat his foot along with the music involved teaching Cheatham something about the temporal relation between the music and the body. On the other hand, it seems the content of that example (the lesson learned about the relation between music and the body in jazz) plays a characteristically central role in jazz. Here, the interoceptive (bodily internal stimuli) use of the patting gesture toward the end of self-monitoring. In other words, it seems that there are different functions

Representations-for-Transference - gestures that communicate musical commands between agents. For example, lowering one's hand slowly with the palm facing down to tell a drummer to reduce the volume.

Representations-for-Performance - gestures that don't communicate anything of significance between agents, but that contribute directly to generating musical ideas. For example, a pianist decides to allow her hand's bounce, weight and shape to guide her to new improvised phrases.

While classical music deploys gestures to convey musical ideas for transmission between subjects, jazz appears to feature gestures more centrally for representing information for the individual subject's tracking of their orientation in 'musical space'. Perhaps this is unsurprising given that jazz ensembles lack conductors, whereas classical ensembles receive gestures from the conductor—whom, among other things, organizes the timing and phrasing of the music. This would suggest that the conductor's motions constitute representations-for-transference. It also seems consistent with the earlier account from jazz pianist Fred Hersch to interpret the swinging motions of a jazz pianist as representations-for-performance. He continues adding that he knows that when his playing is 'really swinging because he observes himself to be 'unconsciously moving from side to side or back and further on the piano bench.' In fact, it seems tenable to suggest that the conductor's visibly transmitted gestures track the information that is interoceptively tracked by the jazz musician's body.

Perhaps a more accurate account of the relationship between embodied cognitive processes and cultural traditions is that different cultures have found different ways of distributing the same processes towards different ends. In other words, that the same means of doing things with the body to track information and solve problems are

distributed in different combinations and pairings.⁴ For example, while jazz certainly has its own share of composers who wrote music on staff notation, there is simultaneously a very different cultural emphasis placed on literacy. Note that Sudnow defines jazz as ‘ways of moving from place to place as singings with my fingers’, which emphasizes the role of spatial awareness. So, while both traditions invoke the senses of vision and proprioception, the role of these senses are also different in each (not categorically). In short, literacy is an elementary requirement of Western classical education, whereas literacy is considered a potentially limiting crutch for developing jazz musicians whom are heavily encouraged to ‘learn by ear’. As such, any pianist who needs sheet music is not advanced enough to play in top jazz clubs, but any pianist who cannot sight-read is not advanced enough for beginners classical ensembles.

Recent neurological studies suggest that seemingly minor factors like the language a child learns at home can cause lasting attentional differences in visual processing. This literature has found differences among East-Asian populations that were until recently treated as homogenous by researchers. For example, cognitive differences have been discovered between speakers of Korean and speakers of Chinese that are the result of differences in their languages. In tests of attentional bias it has been

⁴ Importantly, these are not variations in kind or essence, but of pattern at particular moments. As we will see in the next section, a culture’s pattern of embodiment is not stable over the course of its own history. So even if one did wish to distinguish cultures by embodiment like MacIntyre and Appiah distinguish cultures by narrative identities or ‘characters’ available to members, this would involve an error if it was thought that the same culture shares an enduring essence with without that precludes it from bearing a closer resemblance to a different culture at every stage of its history than it shares with itself across stages of its own history. It would also be mistaken to assume that these variations are progressing towards any stable endpoint.

hypothesized that the structure of Korean disposes speakers to focus on certain forms of information more than the structure of Chinese disposes its speakers to focus on. Specifically, the Korean language seems to cause its speakers to focus on what psychologists call ‘figure information’ and Chinese seems to dispose its speakers to focus on ‘ground information’. Given that musical syntax is a distinguishing feature of different genres it should not surprise us that the self-reports of musicians also seem to involve different distributions of attention in the same contexts. In addition to the phenomenological accounts we have discussed, recent studies confirm that playing jazz music does involve different brain processes than classical music on the same instrument. Bianco et. al (2017) found that the brains of jazz pianists exhibited greater neurological flexibility for performing harmonies in unexpected ways, while the brains of classical pianists show greater awareness of how to perform melodic fingerings precisely. This enables jazz pianists to capitalize on mistakes better than classical pianists and classical pianists to avoid mistakes better than jazz pianists. In particular, the classical pianist’s brain is focused on how it should play the next line, not what the next line should be as in the case of the jazz pianist’s brain. These findings reflect the different values the traditions inculcate; virtuoso jazz pianists are judged by their ability to incorporate mistakes into improvisations, by contrast the classical virtuoso is defined by incredible technical proficiency. These neurological differences are also consistent with the subjective reports of trained musicians. Considering the previous description of classical organ given by Merleau-Ponty (1945), it would seem false if this meant that classical organists make no contributions to performances. Classical musicians must apply

interpretation, technique and their unique bodily affordances. No doubt, Glenn Gould's unique understanding of J. S. Bach could not be replaced by a self-playing piano and for that matter it is unlikely that any software could replicate Gould's interpretation of Bach without modeling much of whatever made Gould himself. Perhaps what Merleau-Ponty intended to suggest is that classical organ does not require contributions that are derived by attending to the body itself, as a means of figuring out what to play next. For example, he may be suggesting that things like the beliefs of the players contribute functionally to their performance, as do their physical ability to reach and press the keys—but, the hand of the player does not inspire new directions for the performance of a melodic sequence in virtue of how it, the hand itself, looks or feels in the moment. In other words, the expression of the notated music is the main concern and thereby the player's thoughts matter in relation to the composition, but not if the player's thoughts are about something else, like their own body. This would mean that organists engage in the act of implicit self-expression, but only as a byproduct of their intended goal of broadcasting and animating the music that is intended by the composer. For example, the keyboardist might incorporate a fleeting sense of melancholy if it is deemed appropriate as the result of interpreting the composition, but one would not incorporate melancholy as the result of interpreting one's own sense of carpal tunnel. Rather, it seems that he is saying that states of the performer's body are of instrumental value, insofar as they improve the performance, not as a source of inspiration in themselves.

Merleau-Ponty continues that the [classical] music exists for itself while

“everything else exists through it”. This also seems to suggest that the performing body is not perceived by the musician as contributing to the meaning of music, but as a means for its realization. The way that Merleau-Ponty describes the classical organ is also compelling for how it is backed by other recent neuroscientific data. He writes that there is no “place for any ‘memory’ of the position of the stops”. This suggests that awareness of positions of the stops is not sustained, except as the immediate referent of directives read from the notation. He explains that the musical significance of the organist’s actions rests in his giving himself fully to the music so that “[his] body is essentially an expressive space” for what is written. He continues that “it is not in objective space that the organist in fact is playing” which might suggest that spatial awareness is inessential. These remarks are consistent with a recent study by Van Der Hoort (2017) linking increased visuospatial awareness to increased bodily ownership. The researchers found that the sense of ownership over a hand raises visual awareness of that hand by increasing the intensity of the hand-image (i.e. by raising opacity and thereby reducing transparency) “as if it increases in contrast.”

It is clear that people of different skin complexions are credited with creating different characteristic styles of music. It is also clear that there is a longstanding practice of categorizing mental acts into colors. But if these practices are anything more than prejudice, there would need to be evidence. It is tenable that the same skin color can be deployed differently in different cultural settings by having different semantic associations linked to its hue. But even so, any such differences would not be the result of anything static being shared by the members of a culture. In other words, even if it turned

out that a group of agents deployed their skin complexion towards a specific task—there is no evidence that a person’s actual skin color would matter. Instead, it is the perceived skin color that would, if anything, contribute to the load of solving visual tasks. Recall that we do not actually see the environment, but as our brains expect them to be in the context the signals it receives. Therefore, it is not the fact that a person’s skin has any color that can make the color useful for visual tasks. Instead, one would need to learn to use that color in a way that makes such a response to it automatic. Such associations might be transferred implicitly like biases.

In fact, it also might be the case that other properties of visual cognition explain cognitive differences in cultural practices better than the literal interpretation of the color metaphors ‘white’ and ‘black’ in music. This is significantly more likely, given that skin color is but one of many visual factors that inform the visual perception of physical objects. So if the hypothesis of embodied cognition is correct, we might continue trying to think of perceived skin color as an optional resource to be deployed in the processing of other tasks, similar to the usage of one’s fingers for counting. This might be consistent with the findings of empirical studies on visual cognition that perceived attributes like color, luminosity, transparency and texture affect visual search and attention.

Consider the following cases:

Example 1: Suppose that silent drive-in theaters were popular in N. Carolina and amplified drive-ins were popular in S. Carolina (any arbitrary reason will do, e.g. noise ordinances). In this simple way, contingent social agreements would cause the two

populations to receive the same information differently. This would also be true if all drive-ins were silent but allowed patrons to pick a kind of subtitle from:

- (a.) Morse code broadcasted as visual words on the phone's screens.
- (b.) Morse code broadcasted as audible beeps from the phone's speakers.
- (c.) Morse code broadcasted as tangible vibrations from their phones.

If we saw a film together, but I read the subtitles as dots and lines on my screen while you read the same words as vibrations in your hand, we could be said to have experienced the same story through different senses. The point here is that information can be processed and communicated through different bodily pathways as well as stored outside of the body in different forms. Even the text of this page could be converted and expressed in any of the listed types of morse code.⁵

Example 2: Imagine that a resourceful viewer in the previous scenario chose option (a.) and grew tired of holding the phones up beside the movie projector. Suppose they decided to switch the phone to option (c.) and to hold the phone between their teeth. At this point one might experience it as 'hearing' the dialogue directly as the morse code passes through the skull cavity and into the inner ear as audible waves. If others adopted this strategy, it might be said to have invented a cultural trend that switched from using the hands and external muscles to using auditory pathways to interpret the vibrations.

Example 3: Suppose you were shipwrecked on an island with 100 others. Although no one was seriously injured, you all went permanently deaf. As no one could speak, you

⁵ If this example bothers you because of the practicality of 'reading' morse code in real time at the rate of movie dialogue, just suppose that the point only applied to a very slow and verbally sparse scene.

made charts for signaling in semaphore.⁶ Suppose that you survived this way for 5 years before being rescued. By the 5th year, your signals were so fluid that you developed shorthand motions to communicate more easily. Now let us ask how your tribe of survivors might seem to your rescuers. It might be natural for them to wonder: “Why are these people communicating by dance?” By this point you might not hear any inner-voice while signaling, so perhaps it also felt like a dance of sorts. But even if it did feel like silent dancing, would this be speech any less than sign language is speech? In one sense, everything that can be expressed in semaphore can be spoken orally or written by the English alphabet, but the children born on the island might never have learned to speak or read and only be accustomed to thinking in semaphorical dance.⁷

I have already warned against making the generalization that ‘culture A is more embodied than culture B’, but it is tautological that certain cognitive loops belong to different cultures. In this way every culture is ‘differentially embodied’ given that cognitive correlate arrangements differ across humans. In this same sense it would also be true to say that you are differently embodied than yourself when you switch or remove your socks. Your perception of the room would be altered by the very fact that you are now receiving cues about your temperature, the room and the location of your toes unmediated by those pesky layers of cotton that you switched for freshly ironed nylon. In principle you are no more categorically different in your cognitive abilities from a person

⁶ Semaphore is a telegraphic system for communicating by moving ones arms into different positions while holding two flags. Since sempahore is divisible into 30 alphabetic/numerical characters, it can be used to ‘say’ any English sentence—likes the ones on this page.

⁷ Given that these examples are not inherently farfetched, imagine what natural selection might invent with sufficient time and environmental variation.

from a different culture on the basis of wearing socks than you are from anyone who has differently colored skin. Similarly, just as wearing different socks does not make a person or culture ‘more embodied’ than its peers, merely having different skin complexions does not mean that there is actually any inherent impact on an agent’s cognitive embodiment. Instead, it is the degree to which particular cognitive operations are embodied that matters. This concerns the contribution made by an agent in a given task (e.g. counting with the hands), but not the body itself. To be clear, it is vacuous to say that agent a is ‘more embodied’ than agent b unless it is in reference to particular tasks; even so, the degree of embodiment would not refer to the agent, but rather the particular cognitive loop that a mental process instantiates.

It remains an empirical question whether phenomenal transparency/opacity are among the qualities that racial color terms are being used to reference when speaking about music or other cultural practices. Something along these lines would increase the intelligibility of self reports such as those from musicians like Stevie Ray Vaughan, whom described feeling that he was ‘a black man inside a white man’s body’ by presenting an empirical basis for interpreting and testing any such claims. It might be relevant to note that Vaughan used the spatial metaphor of being ‘inside’ another’s body for the same reason that it is intriguing that some philosophers who analyze the semantics of black identity have also approached it in terms of spatial metaphors. For instance, philosopher Tommie Shelby distinguishes between thin black identity and thick black identity. He proposes the following definitions:

Thinly Black Identity

Having the correct inherited, visible traits and biological ancestry.

Thickly Black Identity

Having distinctively black beliefs, values, conventions, traditions, and practices.

Notice that this second set of attributes, those which confer thick black identity, are psychological traits. Presumably, whatever criteria make for them being ‘distinctively black’ requires the first category of morphological/biological blackness is accepted to rigidly designate the meaning of ‘black’ so that it can appear in the second list. In other words, whereas thin blackness is logically independent, thick black identity is dependent on a prior conception of what is ‘black’. This relationship might be historically contingent, as the color metaphor is even more abstractly related to psychological properties and practices than it is to actual skin complexions. It seems fair that one might opt to replace Shelby’s spatial metaphors of ‘thin’ and ‘thick’ with something more specific and perhaps empirically grounded. For example, suppose that we were to make the following substitutions:

Physical Black Identity

Having the correct inherited, visible traits and biological ancestry.

Psychological Black Identity

Having distinctively black beliefs, values, conventions, traditions, and practices.

This leads to the intriguing question of what might be these distinctive, or relatively distinctive, beliefs, values, conventions, and traditions. If nothing is lost by replacing Shelby’s terms, then it seems fair to reinterpret Shelby’s suggestion as meaning that the added component is psychological. On the one hand, the features of the second category

are fits for the psychological approach to personal identity. On the other hand, it might be argued that the second category is actually concerned with something that would be more appropriately described as 'social' identity. I am sympathetic to this point and would grant that being socially a member of this identity group is probably necessary to have its psychological attributes (not in principle, but in practice). Still, whatever Shelby's 'thicker' layer of blackness consists of, it is appropriate to ask what difference these traits would make to the identity of someone who is not antecedently thinly (i.e. morphologically) black.

Perhaps the plausibility of there being a cognitive referent for the color terms 'black' and 'white' is increased when we consider the differences in the conceptual metaphors that are used by Western European and Western African languages. But if this is correct, the colors themselves are actually very disconnected from their assumed referents, like in Shelby's example. Cognitive linguist Eve Sweetser (1990) explains that the embodied metaphors at the source of Western epistemological concepts are based on visual metaphors:

Why then is see (as opposed to kick or feel or smell) used to mean knowledge? We are intuitively certain that the choice is not random, that see is a well-motivated choice for extension to the sense of knowledge. Our intuition is confirmed by systematic relationships with other lexical items... Consider the sequence "Do you believe in baptism" "Believe? Hell, I've seen it!" If seeing means you know, in our understanding of the world, then (since believing is less sure than knowing) it's silly to say we just believe something for which we have direct visual evidence. The answer thus has to do with conceptual organization: it is our understanding that vision and knowledge are related." (Sweetser 1990, page 5)

The same is not true in Africa, where there is a tendency to promote the somatic senses (i.e. proprioception and kinesthesia) in epistemic and moral reasoning. Whereas idioms like ‘seeing is believing’ are considered axiomatic in many Western languages such as English, African languages such as Ewe are significantly more centered about bodily movement and spatial awareness.

[Ewe] speakers might also ask, ‘Did you see it?’ which would...mean ‘Did you see the place (where the event happened)?’ Such phrasing was not as common... In the Ewe language, the whole phrase rested in an idiom of bodily presence and sound (hearing of words), which was a kind of somatic and aural ‘witnessing’ (or knowing) rather than an eye-witnessing. (Geurts 2009, page 137)

The important difference is that the English conception of ‘witness’ involves being a credible visual observer, whereas the Ewe conception of ‘witness’ involves being somatically present. In particular, the Ewe speakers would ask if one was somatically present ‘when the word was at its place’. Here, ‘the word’ is meant as an aural signifier of the event. Anthropologist Kathryn Geurts explains that the proprioceptive positioning of ‘the word’ is the basis of the Ewe notion of truth. She argues that the visual mode of representation is comparatively less valued by the Anlo than other sensory modalities, which is a departure from the Euro-American valuation of sight. In chapter 6 of *Cultures and the Senses* she writes

In fact, in the same way that English-speaking people might utter (in response to another's commentary), "That's the truth," Anlo-Ewe speakers might respond with the word "Nyate fe," which literally meant "The word is at its place." Truth, in metaphorical terms, had a kind of kinesthetic-proprioceptive quality in that it concerned placement and position. The inquiry "Nyate fea?" meant "Is that the truth?" but in essence the question asked whether the word was at its place (meaning proprioceptively positioned). (Geurts 2009, page 136)

Many prominent Western epistemologists have framed their conceptions of knowledge in terms of visual cognition. This emphasis on vision is referred to by the term ‘Ocularcentrism’. For example, in *The Metaphysics* Aristotle said the following about vision’s privileged relation to knowledge.

All men naturally desire knowledge. An indication of this is our esteem for the senses... most of all the sense of sight...we prefer sight, generally speaking, to all the other senses. The reason of this is that of all the senses sight best helps us to know things, and reveals many distinctions. (980a)

Similarly, in the second paragraph of the *Third Meditation*, Descartes argues that epistemic certainty can be attained on the basis of having a ‘clear’ and ‘distinct’ perception of an idea:

Do I not therefore also know what is required for my being certain about anything? In this first item of knowledge there is simply a clear and distinct perception of what I am asserting; this would not be enough to make me certain of the truth of the matter if it could ever turn out that something that I perceived with such clarity and distinctness was false. So I now seem to be able to lay it down as a general rule that whatever I perceive very clearly and distinctly is true. (Descartes 1996, page 24)

Sweester (1990) suggests that the cognitive metaphor that dominates the Western concept of knowledge is ‘Knowing is Seeing’. As evidence for her account, she demonstrates that the visual sense is the etymological source of many Western epistemological terms including: ‘wisdom’, ‘witness’, ‘evidence’, ‘advice’, ‘guide’, ‘history’, and ‘idea’ through their common etymological origin in Proto-Indo-European root ‘weid-’ meaning ‘to see’. Similarly, terms such as ‘reveal’, ‘theorize’, ‘elucidate’, ‘enlightenment’ and ‘discovery’ originate from the metaphor of light and showing visually. By contrast, one might regard

West African cognitive metaphors as being ‘Somaticentric’. Consider that the Ewe language employs proprioceptive metaphors when discussing things that were witnessed or giving testimony that we might call an ‘eyewitness account.’

The phrase *Eno tefea*, or *Eno nya tefea*, was the common and colloquial expression among Ewe (and I would include Anlo) speakers when eliciting an eyewitness account. [It translates] as “Did you sit down (witness) at the place where the event occurred?” While it did not exactly mean “sit down,” it certainly referred to a somatic presence, and such bodily attendance was perceived and experienced as an integral part of one's ability to “witness,” or to know something and recount it. (Geurts 2009, page 136)

Ewe speakers downplay the role of vision in their linguistic practices. So a fair question is to what extent is visual embodiment different in their subjective experiences and methods of information processing? Recall the previous section’s discussion of how different cognitive loops can be deployed at tasks that might functionally appear the same to observers (e.g. deaf Beethoven’s proprioceptive improvisation). Is it plausible that the Anlo experience themselves in a way that promotes somatic experience to a greater extent than it is felt by Western subjects? Perhaps, but some cognitive scientists would consider this unimaginable that they experience themselves as entirely opaque bodies. Thomas Metzinger presses us to ask what it would mean to experience one’s somatic body as completely opaque:

How could your phenomenal body image, in its entirety, ever become opaque? Is it possible to lose internal sensory transparency?... This is a situation which you simply cannot imagine. (Metzinger 2003, Page 336)

Recall that opacity is the opposite quality of transparency, such that opacity is the trait that objects have to the degree that they block light from passing through its surface. For

example, a wooden door is opaque if you cannot see objects that are behind it, but a peephole in the door is transparent if you can look through it to see the outside world. The spectrum between transparency and opacity can be defined in terms of the space between subjective invisibility and subjective visibility. Heidegger (1927) explains transparency with the example of tools, which are not felt as ‘things’ during ordinary usage. While the carpenter is hammering, there is not a separate awareness of the hammer. Instead, the hammer is incorporated as an extension of the carpenter’s agency and is transparent. Andy Clark (2011) writes:

Fluently using a stick, we feel as if we are touching the world at the end of the stick, not (once we are indeed fluent in our use) as if we are touching the stick with our hand. The stick... is in some way incorporated, and the overall effect seems more like bringing a temporary whole new agent-world circuit into being. (Clark 2011, page 31)

Metzinger explains that under non-pathological circumstances, the somatic self model remains transparent, but parts of it can become opaque (temporarily and to a degree).

You are never in contact with your own body-as an embodied, conscious entity you are the contents of an image, a dynamical image that constantly changes in a very high number of different dimensions. However, this image is at the same time a physical part of your body. (Metzinger 2003, page 301)

It might not be possible for us to know if the Anlo-Ewe people experience themselves as anything approaching opaque bodies, but there is evidence that they rate somatic self-awareness highly enough to consider it constitutive of personal identity. To start, they distinguish between ‘reified kinds of walks’ that are considered innately tied to forms of thinking and reasoning (Geurts, Chapter 3). The idea is that walking styles are

fundamentally linked to moral reasoning and directly expressive of different varieties of moral character. As such, each kind of these ‘walks’ (of which there are no fewer than 50) is believed to broadcast the essence of one’s virtues, moral character and personal identity in intersubjectively perceptible social space. In addition to the linguistic emphasis on the somatic senses, many of the Ewe people’s mythological narratives emphasize the importance of somatic experience for personal identity via the metaphor of shape-shifting. In this way, somatic metaphors are used by the Anlo to teach that the essence of a person’s identity resides in a particular being-in-the-world. While explaining a particular sacred myth, Kathryn Geurts writes

Shape-shifting abilities interest me for what this indicates about somatic changeability and an associated philosophy or cultural logic concerning the tension between adaptability and essential form. Another famous story about Tsali focused on his role in the flight out of Notsie—the Anlo migration story... After all the people had fled the walled city and footprints had been planted in the soil facing the gates (to suggest the city was under siege), Tsali supposedly turned himself into a small striped mouse so that he could crawl in and out of the footprints, leaving tiny traces of mouse tracks... Such legends abound of [the] use of shape-shifting to accomplish magical feats. Referred to as *etsi amlima* (magic) or, more specifically, as *tro zu* (to turn, to change into, to become), he had the capability of altering his body or transforming his somatic construct as a means of accomplishing an end. In the process, however, he never lost his essence and always returned to the original form or shape of Tsali. Shape-shifting, of course, can be found in the myths of many peoples. Nonetheless, I would like to suggest that tension between flexibility—even at the corporeal level—and maintaining some kind of ontological essence symbolize an important dimension of Anlo sensibilities, especially in relation to personhood and identity. (Geurts 2009, page 140)

The Anlo-Ewe also regard morality to have sensorial qualities, due to the close association between kinesthetic sensations and moral dispositions, which share the common linguistic root ‘zo-to’ which means to walk, travel or move one’s body. For

example, the walking style known as ‘zo lugulugu’ denotes ‘swaying, tarrying, dawdling or moving as if drunk’ and is used to describe a person’s character if they are considered aimless and irresponsible. Whether one is deemed ‘lugulugu’ as a result of their characteristic laziness or having a slouched posture, either manifestation (behavioral or postural) would be considered sufficiently revealing of the underlying moral character that pervades their moral dispositions. This is to say that there is not a conceptual cleave between the ideas of ‘being’, ‘moving’ and ‘acting’. In chapter 4 ‘Kinesthesia and the Development of Moral Sensibilities’, Geurts writes

The logic expressed was that if you move in a lugulugu fashion you experience sensations of lugu-ness and begin thinking in a lugulugu way and become a lugulugu person, which is then evident to others from the way your lugulugu character is embodied in your lugulugu walk. Or, if you consistently think in a lugulugu way, you would also move in a lugulugu fashion and basically develop into a lugulugu person. (Geurts 2009, page 76)

The emphasis on walking styles is also why the notions of ‘movement’ (azolizozo) and ‘character and moral feelings’ (azolime) fall together within a concept called seselelame:

Seselelame (which can be translated loosely as ‘feeling in the body’) is best understood in reference to [somatic] modes of attention.... this phrase [refers to] culturally elaborated ways of attending to and with one's body in surroundings that include the embodied presence of others [or] culturally elaborated attention to and with the body in [an] intersubjective milieu. (Geurts 2009, page 41)

It is worth reiterating that bodily movement is considered by the Anlo-Ewe to be an inherent display of moral character, not a consequence or a symptom, as movement directly embodies the essence of a person’s nature. The senses that we ordinarily would call ‘interoceptive’, ‘proprioceptive’ or ‘kinesthetic’ are considered by the Anlo to bear

intersubjectively observable components. As a result, it is possible to recognize the moral states of others by observing their walking style. Anlo children are taught from a young age to cultivate their somatic senses.

Do agba! Do agba!" which was an imperative statement encouraging the babies to 'Balance! Balance!' They did this when infants were just beginning to hold up their heads and sit up without support, but the attention to balance continued with toddlers and beyond. Head-loading (walking with items balanced on top of one's head) was a common practice among all ages. (Geurts 2009, page 4)

Geurts explains in *Culture and the Senses* how it is that the Anlo consider the sense of one's body to have intersubjectively observable (indeed, morally weighted) features.

Your character, your moral fortitude is embodied in the way you move, and the way you move embodies an essence of your nature. My Anlo neighbors did not suggest that people saw the child walking lugulugu and then thought that he was wayward. Rather, they suggested that the sensations the child would experience in the body (interoceptively, or in terms of seselelame) would necessarily involve imaginative structures that would develop in the mind, and that whole would then be perceived by all as a culturally constituted and objectified phenomenon called lugulugu. (Geurts 2009, page 76)

Furthermore, they rank the mental capacity for balancing one's body upright to be the most important symbol of what makes us human—particularly, the ability to maintain bipedal balance, which distinguishes humans from other species. As a result, good posture and having mastered the ability to balance well on two legs are regarded as essential to being human. Incidentally, this translation of 'good posture' melds the aesthetic and the ethical. In addition to the historical sources of vocabulary terms being rooted in different senses, given their roles in ethics and epistemology it is plausible that these languages also reflect phenomenological differences. While it is too soon to suggest

‘black culture is more phenomenally opaque, due to its emphasis on somatic perception’, it seems appropriate for such questions to be studied. This might explain how it is possible for someone with white skin to feel like they are a black person in a sense that is not immediately dismissed. It is premature to say how such details might be configured, but it no longer seems reasonable to deny that cognitive embodiment was cultivated differently by the two populations. It is tenable that these population differences have been mischaracterized by appropriating terms that were previously used to denote external properties populations (i.e. racially). As such, it will not suffice to conflate the color concepts of ‘blackness’ and ‘whiteness’ with the patterns of embodied differences we observed across cultures.

There is an important alternative to the ideas we have explored over the course of the previous chapters, which ask if as a general principle it is correct that Western thought is ocularcentric and African thought is somaticentric. The idea is that Western thought is somatiphobic, meaning that it is not dominated by vision to the extent that it is dominated by a rejection of the somatic. One version of the somatophobia critique is comes from Elizabeth Grosz who writes:

The Western tradition associates man with the mind and woman with the body. Coupled with philosophy’s view of itself as concerned with the mental—that is, the conceptual, the ideal, the theoretical, the abstract and the rational—as opposed to the body, which is viewed as practical, concrete, and non-rational, philosophy has “surreptitiously excluded femininity, and ultimately women, from its practices through its usually implicit coding of femininity with the unreason associated with the body.” (McCarthy 2010, page 37)

Indeed Grosz goes so far as to state that since “the inception of philosophy as a separate and self-contained discipline in ancient Greece, philosophy has established itself on the foundations of a profound somatophobia.”

What we end up with in most of the history of philosophy in the West, then, is a dichotomy of male/female being attached to the homologous hierarchical dichotomies of mind/body, reason/emotion, and so on. In these dichotomies, each side is set up in opposition to the other and the second term in the pair is always devalued. We are left with a logic of either/or and there is no room for one of both—and that would allow each “side” to be valued. In Japanese philosophy, this is not the case for the mind/body pair, nor, even necessarily for male/female. This can be most clearly seen in the above-mentioned Buddhist concept of bodymind. (McCarthy 2010, page 38)

There are no proven differences in how individuals perceive reality on the basis of their skin color. On the contrary, the data suggests that the relevant factor is perceived skin color. Still, this factor hardly compares to the findings of studies revealing how bodily shape, fitness and emotion shape perceptual judgments (e.g. estimates of distance or speed). Re and Dzhelyova et al. (2012) found that factors like height and body mass modulate how observers perceive distances and being thin or being tall affects if observers estimate distances accurately. Yet even in these cases, it is not the physical body alone that causes differences in perception, but also the self-concept which does not always reflect the body. The mental significance of skin color in studies of cognition only reflects conditions where skin color is brought to a high degree of perceptual salience. Even in such cases, the results are not as significant as the other bodily variations mentioned. Fear of people with different skin complexions has a much greater ability to warp perceptual experience than possessing any complexion has been found to cause

among healthy human agents. Again, the perception of one's skin as having a particular color is the relevant variable in studies of bodily feedback with visual perception. Furthermore, interactions between perceived color and other cognitive processes are not generalizable across cultures that distinguish skin color differently. They are also not generalizable across linguistic communities that give different meanings to color terms.

It would be interesting and not completely surprising if perceptual opacity is (at least somewhat frequently) the reference of expressions that people intend when using the term 'blackness' to describe the cognitive aspects of things. In principle, this would not need to be very different from the capacity we have to detect verbal accents. Everyone is familiar with the experience of opacity, even if we do not have the formal tools to discuss it. There are obvious differences in how we use our bodies to think, but the same general sensory capacities can be assumed to be intelligible to everyone through language; even if I cannot actually know how it feels to have a sense of the cardinal directions built into my spatial awareness, I can grasp that the Guugu Ymithirr aboriginal tribe use cardinal directions to communicate spatial information. The more difficult question is not if I can acquire other sensory capacities that would bestow me with new ways of perceiving information, but whether realizing that there are neurological links between certain perceptual experiences and ethical perspectives should produce relativism. For instance, if using one language affords tendencies to perceive certain human relations as more basic than another, it might seem that there are connections to ethical dialogue.

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Biography

Dr. Matthew C. Harris is a philosopher and a musician from Newark, New Jersey. He received his Bachelors in Philosophy from the State University of New York at Geneseo in 2012 (*with highest honors*), before receiving his Doctorate in Philosophy in metaphysics from Duke University in 2019. While at Duke, Dr. Harris was a member of the Duke Society of Fellows and a recipient of the Dean's Graduate Fellowship along with numerous Competitive Summer Research Fellowships—he also gave lectures about his innovative philosophical research to crowds at Stanford University, Cornell University and Princeton University and worked closely with philosophers at other institutions including Richard Miller and Kwame Anthony Appiah. In 2019 Dr. Matthew Harris accepted a position as a Postdoctoral Scholar in the Philosophy Department at the University of California at Los Angeles.